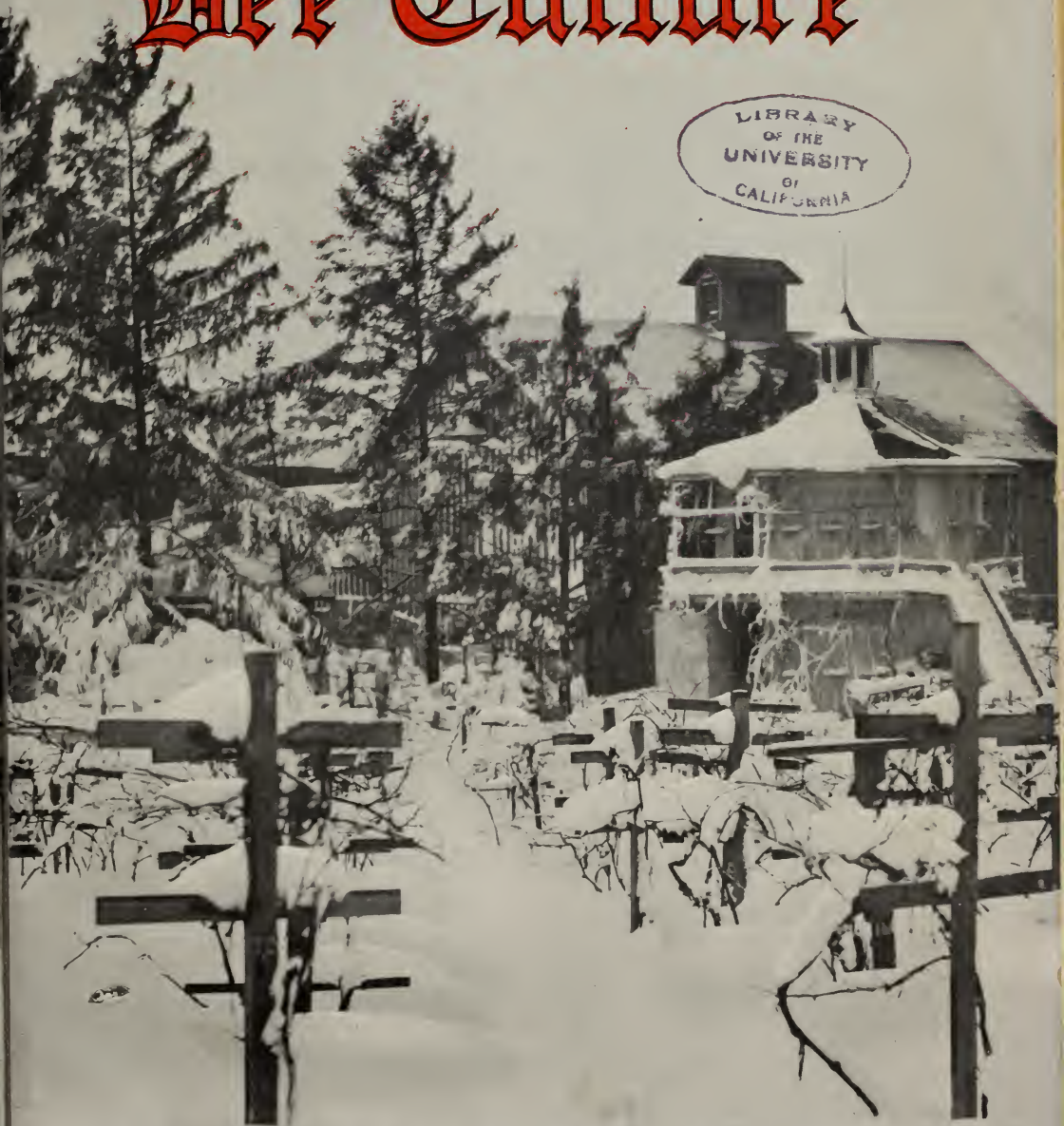
Gleanings in Bee Culture



VOL. XLI. DEC. 15, 1913, NO. 24.

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VOL. XLI. DECEMBER 15, 1913 NO. 24

Editorial

We wish all a merry Christmas.

Our English correspondent, Mr. John Smallwood, page 885, writes very interestingly of the links that bind together the two English-speaking nations.

We would call particular attention to the article, p. 892, by Miss McIntyre, the young lady who helped to pay her way through college with money she earned with her bees.

THE FOOD VALUE OF HONEY.

In the table found on page 904 it will be seen that honey has a high food value as compared with oysters, eggs, and beef. Honey salesmen do not, as a rule, play this tune strong enough. They should make it clear that honey is not only a high-class condiment easily assimilated, much more so than other sugars, but a food that will make brain and muscle. If carbohydrates are a necessary part of our diet let us emphasize the wholesomeness and cheapness of honey to supply this need.

BARSTOW TWO-SHAKINGS TREATMENT FOR FOUL BROOD.

W. H. Barstow, in this issue, gives a very unique and simple method for practicing two shakings for the cure of foul brood. We never found more than one shaking necessary for American foul brood; but to be on the safe side we shall do well to practice the double shaking. The plan offered by Mr. B. eliminates all possible danger of contamination of brood-frames, and saves a large amount of work.

OUR INDEX FOR 1913.

The reader will not fail to notice the full index that appears in this issue. It contains 1920 references, besides illustrations and list of contributors. From it one can get an idea of the vast amount of valuable matter that has been given in these columns during the past year. The up-to-date beekeeper will, of course, preserve it that he may take up some of the discussions that have occurred during the past year, which discussions he was compelled to go over hastily during the busy time of the year. These long winter evenings will enable him to get very much more of value out of his journals if he will make an intelligent use of the index.

WHEN TO CUT ALFALFA.

The western beekeepers will be particularly interested in the discussion in this issue on the time to cut alfalfa. There has been a fear that the tendency was to cut before the plant comes into bloom, and this would mean a reduction in the amount of alfalfa honey. But, apparently, we have not as much to fear as we supposed. As a matter of fact we are told that those who believe in early cutting are, as a general rule, behind time. Early cutting may do a little better for dairy purposes, but there is no advantage in doing so in the production of hay for horses and mules. In the language of the Utah Experiment Station, "To insure a large yield of dry ripe hay and the largest amount of albumen, lucern (alfalfa) should be cut not earlier than in medium bloom. . . It will be a more serious error to cut too early than to cut too late."

THE NEW YORK STATE BEEKEEPERS' CONVENTION AT ROCHESTER.

One of the most flourishing organizations of beekeepers in the United States is the New York State Association of Beekeepers' Societies. This organization, as its name indicates, is made up of a number of affiliated county societies. Its general scheme of affiliation of smaller bodies is similar to that of the National Beekeepers' Association.

New York is one of the very best honey-producing States in the Union; but bee disease for a few years back, especially European foul brood, has made serious inroads on the honey business. But, thanks to this splendid organization, and the co-operation of the Agricultural Department of the State through its four efficient foul-

brood inspectors, both European and American foul brood have been brought largely under control. The inroads of these diseases have eliminated to a great extent the farmer who kept a few skeps of black bees; but the large producers—that is, those who make beekeeping a business and the small beekeepers who are keeping up with the times—are as much in evidence as ever.

We found a large and enthusiastic convention at Rochester, Dec. 2 and 3. In point of attendance it probably surpassed any similar meeting this year in the United States. The discussions were practical, interesting, and lively. In our next issue we hope to give a brief digest of the proceedings.

THAT CARLOAD OF BEES SHIPPED TO FLORIDA; HOW THEY ARE PROGRESSING.

The latest advices from our apiarist, Mr. J. E. Marchant, at Apalachicola, showed that the bees were doing finely. The weather has been extremely mild, and the bees have been gathering natural pollen, and are rearing brood at a rapid rate. No honey is coming in, however; but we are feeding to keep the bees on the boom. Mr. Marchant appears to be very enthusiastic about the way things are moving, for he is very anxious to have the project prove out a success. A further examination showed that three colonies were dead, and 25 weak. The rest, however, are in good condition, making in all 273 fair colonies on arrival, and 25 weak ones.

But one must not imagine that traveling down south with a carload of bees in a fruit-car is like traveling in a Pullman. It is far from that. Mr. Marchant writes that he secured but little sleep; in fact, he had to be up with the bees almost night and day. In the midst of the trip some of the staging broke down, and he had to stop and take out over a hundred hives, make repairs, and load the bees on again. The extremely warm weather during which the bees were moving made his trip a peculiarly hard one; but, as we said in our last issue, all is well that ends well.

If our bees continue to gather natural pollen, there will be no doubt as to our ability to make a fine increase, and that is what we are after. If we get a crop of honey in addition, from tupelo, we shall consider ourselves as so much ahead.

A great deal of interest has been aroused among the beekeeping fraternity, and they are watching this experiment with not a little interest. In the mean time, the bees up north are breeding finely—so much so that there will be danger of starvation unless the beekeeper himself keeps close tab on his stores.

DON'T LET YOUR BEES STARVE; OUR HARD-CANDY FEEDING DURING MIDWINTER.

Our Mr. Mel Pritchard, the man who raised over 3000 queens last season, is wintering some colonies outdoors on dry combs with a little pollen with no other stores than slabs of hard candy. Brood-rearing is going on at a rapid pace with these colonies. There will be no danger of starvation, because it is very easy to determine whether the bees have sufficient stores by lifting the packing over the brood-nest. One advantage of the candy is that it is a concentrated food, and that it can be so easily renewed. But its chief advantage lies in the fact that the bees are directly under their food supply, and can not starve. In case of combs filled with stores, the bees are liable to eat away a space, leaving themselves an inch or two away from the main supply, and during a cold snap will starve. This can not take place with candy. A full set of photos and further particulars will be given later.

But, to return to the Florida bees. Mr. Marchant has taken a number of fine snap shots, and is preparing to write up his experiments for Gleanings.

E. R. Root expects to visit the Apalachicola section about the last of January. H. H. Root, after E. R. returns, will then go down and assist in extracting during March or April.

Later.—Another blizzard of snow has hit us again. Our men are out with team and sled to bring two of our outyards of bees in that we did not take down to Florida. Snow closes the entrances while the bees are being hauled. On arrival they will be loaded in our bee-cellar under the big warehouse.

THE GRAND OLD MAN OF BEEDOM; HIS RECORD-BREAKING YIELD OF COMB HONEY.

Dr. C. C. Miller, of Marengo, Ill., comes nearer being the "Grand Old Man of Beedom" than perhaps any other one we could name. There are other men in the ranks who are as old as he (82 years young), but none who have kept *continuously* at the production of honey for over fifty years. To cap the climax of his useful career he secured a crop of comb honey this year which for a general average per colony is a record-breaker. See his report in this issue of Straws. If there is any other man in the United States or Canada who has secured an average of 266 lbs. of *comb* honey from as

many as 73 colonies, we do not know of him. That means almost a carload.

For fifty years we have listened to the counsel and advice of this sage of Marengo. That he is orthodox in his teachings, there has never been any question. If there had been, it would have been immediately dispelled by the knowledge of his remarkable yields of honey covering a period of many years, and the quality of his production. Said one of the largest buyers of comb honey in New York, "Dr. Miller's honey is always fine; and, what is more, it is always graded honestly." Indeed, if we mistake not, his crops have been contracted for and sold some seasons even before they were produced.

Beautiful in spirit, with an ever abiding faith in God, his sentences, even from the printed page, almost sparkle with the good will that flows out from the man. One is prepared to love him, even before he sees him; but when one mets him and talks with him face to face he realizes that, while the printed page reveals much, it does not show all of the kindly spirit back of "the smile that won't come off."

Dr. E. F. Phillips, of the Bureau of Entomology, Washington, D. C., a year ago this winter, desiring to get some data on the subject of wintering, visited Dr. Miller. On his way back he stopped at Medina. Said he, "Mr. Root, you have said a good deal in praise of Dr. Miller. He deserves it all. He is certainly a grand old man."

If there is any one else on this continent who can dispute Dr. Miller's claim to the title of "Grand Old Man of Beedom," we have never had the pleasure of his acquaintance.

Some years ago we read the book, "Ten Acres Enough," and it was enough to support a big family. We hear much nowadays about "more bees." What is the matter of making a *few bees do more?* Now comes Dr. Miller who might write a book on "Seventy-three Colonies Enough." If he did, he would talk about greater efficiency than we are practicing, perhaps.

THE HAND SYSTEM OF PRODUCING COMB HONEY IN SECTIONS.

Referring to our editorial on page 791, in regard to the system described by Mr. Hand on page 805, the latter writes as follows:

I thank you for the fair and impartial manner in which you reviewed the points in my section-honey system in the editorial department. There are two points, however, that I should like to have mentioned in another editorial. First, you say, "When bees start to draw out foundation they also begin to store nectar in it at the same time." I think you are mistaken here; for as a result of quite extensive observation I have found that ¼ inch is the minimum depth of cells in which bees store nectar to any extent. Since such will be as readily accepted and give better results than deeper cells, this objection is not valid. Second, your statement that thin foundation has a disagreeable way of sagging and buckling in shallow frames calls to mind the fact that we do not use raw foundation for any purpose whatever—that is, foundation that has not been revamped by painting the surface with warm melted wax applied with a brush. If too hot the wax will flow into the cells and thicken the midrib; if just right it will adhere to the side walls, and build them up so as to resemble closely that which has been worked by the bees. It will not buckle; and those who have used it will attest to the eagerness with which bees accept it. Indeed, I'm not sure that it will not supplant drawn foundation in the spontaneous control of swarming; in which case all will be clear sailing.

Birmingham, Ohio, Nov. 21. J. E. Hand.

Regarding the first sentence, when bees start to draw out foundation, much will depend on locality and the strength of the honey-flow. There are times when bees are prepared to jam in nectar as soon as the cells begin to be drawn out.

In regard to the second point, it would be our impression that the painting of the surface of the foundation with warm melted wax would eliminate the buckling and the stretching; but would it not leave a disagreeable midrib in the combs after it was drawn out and filled with honey? Perhaps a better plan would be to use a heavier grade of foundation to start with, thus making the midrib uniform throughout. One or two of our correspondents have said if we would use brood foundation in sections the bees would accept it much more readily than the ordinary thin super or the extra thin; that the midrib in the finished comb honey would not be nearly as pronounced as one would imagine. We tried it on a small scale this summer, and were surprised to find that this was so; indeed, if special attention had not been called to it we doubt if we would have noticed it.

RETROSPECT FOR 1913; SOME IMPORTANT APICULTURAL HAPPENINGS DURING THE YEAR.

As we look back over the year that is just closing, a number of notable things have happened in the bee world. First and foremost we are safe in saying that 1913 will go down in apicultural history as having given the largest crop of clover honey that has been known in a couple of decades. Notwithstanding there have been enormous sales and a great consumption of honey, immense quantities of extracted honey are stored seeking a market. This, naturally, has eased up prices a little. The emphatic lesson that comes to us all is that we should

develop our local markets, and not rush in more honey to the great commercial centers.

The year 1913 has seen extremes of weather conditions. While these extremes have been local they have been none the less record-breakers. First we had the Southern California freeze; then the floods in Nebraska and Ohio, and then the snow blizzard south of the Great Lakes. They all wrought fearful damage to property; but, fortunately, no great harm came to the bees.

The year 1913 has witnessed the enactment of an unusual amount of foul-brood legislation. Several States have passed new laws outright, and others have made important amendments to the old laws. Among the States that have had foul-brood legislation during 1913 of some sort may be mentioned the following: California, Connecticut, Idaho, Iowa, Minnesota, Michigan, Nevada, Pennsylvania, Texas, and Utah.

In the line of national legislation has come the enactment of a new tariff law by which the tariff on honey per gallon has been cut down from 20 cents to 10. This means a little less than a cent a pound. What effect this is going to have on the cheaper grades of honey in this country remains to be seen; but so far it has had no apparent effect. Parcel post came in with 1913, and it has come to stay. It is expected that there will be a general reduction of express rates to compete with parcel post. All this goes to help the beekeeper seeking to find a market for his product..

No important invention has been brought out during 1913; but a number of improvements have been made, not only in devices but in methods. Among the last mentioned we should unhesitatingly put to the forefront the Arthur C. Miller direct method of introducing queens with smoke—a method that practically insures the safe introduction of not only laying but of virgin queens. It is not only reliable, but saves from two to four days of valuable time. Reports from all over the United States from queen-breeders and honey-producers alike universally agree that this is one of the greatest tricks of the trade given in 1913.

Among improvements and inventions may be mentioned the Arthur F. Hodgson ventilated escape-board, described on page 577.

Great improvements have been made in shipping bees without combs. Combless packages of bees have been sent to many distant points in the United States by the use of water, and with the loss of only about a dozen bees to the pound. As there are about 4800 bees to the pound the percentage of loss is only ¼ of one per cent. But it should not be understood that *all* combless packages of bees went through in good order. Some arrived at their destination with a loss of 75 per cent; but investigation has shown that in most cases, if not in all of them, the cause of death was due to a leakage in the water-container. At all events, when the bees arrived at their destination the water-bottles were entirely empty.

The other substantial improvements that have been made are in capping-melter machinery, honey-pumps, and power honey-extractors.

The tendency on the part of all large honey-producers has been decidedly toward the introduction of power machinery for taking honey off the hives. There is a reason for this, and that is the high cost of labor that often can not be secured at any price when it is the most needed. It is actually cheaper for the large honey-producer to pay interest and depreciation on his investment of machinery than to try to hire help which he can not get, or lose a substantial percentage of his crop.

There is another tendency; and that is, to make the production of honey a special line of business. While the backlotter is much more in evidence also, the careless, don't-read-the-bee-papers farmer class of beekeepers is being eliminated by bee disease. While the years 1910, 1911, and 1912 showed this process of elimination was going on, 1913 has seen the field in many cases turned over to the specialist. We can point to scores of places where this has occurred, especially where European foul brood has wiped black bees and their owners out of existence.

During the early part of 1913 the *Western Honey Bee,* published by the California State Beekeepers' Association, was started. Its purpose was to get the beekeepers of the Pacific coast in closer touch; and, apparently, it has succeeded in its mission. During this year, also, the *Canadian Bee Journal* was absorbed by the *Canadian Horticulturist.* The bee part of it is ably edited by the Provincial Apiarist, Prof. Pettit, at Guelph, Ont., Can.

Among the deaths of notable beekeepers that should be mentioned for 1913 is Oliver Foster, of Boulder, Col., who died March 12; Dan White, of New London, Ohio, who died June 2; Wm. McEvoy, of Woodburn, Ontario, and I. R. Good, of Marion, Ind., who died Oct. 5.

Thus, gradually, some of the brilliant lights in beedom are being snuffed out; and the few remaining that bridge the past to the present can nearly all be counted on the fingers of one's hand.

Stray Straws

Dr. C. C. Miller, Marengo, Ill.

German bee journals are telling about the Root Co. sending bees in wire-cloth cages, the food being in a tin can out of which the thick sugar-syrup flows drop by drop. Good German friends, that tin can contains only water, and the food is the usual queen-candy.

In Europe it has for years been considered by many quite important to cage the old queen for a time, and then to introduce the new queen in the same cage. S. Cheatham's plan, p. 776, of half killing the old queen, and then putting her and the new queen in the same cage seems a modification of the European plan, and looks like an improvement.

Zander is quoted, *Bienen-Vater,* 251, as giving the following figures to show the great difference in consumption of stores caused by brood-rearing:

Dec., 150 grams (.33 lb.), no brood.
Jan., 700 grams (1.54 lb.), very little brood
Feb., 1100 grams (2.43 lb.), very little brood
Mar., 2100 grams (4.63 lb.), very little brood
Apr., 2900 grams (6.38 lb.) increasing brood

Mr. Beginner, it may be that an entrance ⅜ or ½ inch deep in hot weather is all right for Frank McMurray, p. 819; but before settling down on that, do a little experimenting to see if an entrance two inches deep is not better for *you.* I'm pretty sure it is for me. [We have tried both wide and narrow entrances here at Medina, but very much prefer the former. In other words, Dr. Miller's experience is quite in line with ours.—Ed.]

D. M. MacDonald, *British Bee Journal,* 315, advises a change of queens when a colony daubs too much propolis on sections, and says: "It is curious how even the *same bees* desist under the benign influence of a new queen. One would not wonder at her own progeny ceasing to over-propolize, but that her presence should have a purifying influence on her predecessor's children is nothing short of a marvel." That's in line with my observation that, when the queen of a cross colony is replaced by a queen of gentle stock, the colony becomes gentle long before the progeny of the old queen have disappeared.

In the multitude of discussion in the papers about the high cost of living there is much testimony to the effect that the producer of fruits, vegetables, etc., does as well as the average, or better, if he gets 30 per cent of what the consumer pays. How is it with the beekeeper? If his honey is sold on commission at 16 cents, he will get somewhere around 13½, after deduction for commission, freight, and drayage. The consumer will likely pay 25 cents a section, or near 30 cents a pound; 13½ is 45 per cent of 30, and 45 per cent looks pretty good beside 30 per cent. So the beekeeper isn't as bad off as some others, is he?

Does honey sell for its real value? Isn't there just as much nourishment and as much good taste in a pound of honey as in a pound of butter? And yet the dairyman gets twice as much for butter as the beekeeper gets for honey. On the other hand, the consumer can get four or five times as much sugar as honey for the same money. There's many a father whose child's health is being bankrupted by too free use of sugar, who would gladly pay 50 cents a pound for honey if he only knew that its substitution for sugar would save the health, perhaps the life, of his child. What can be done about it? Don't ask me.

Morley Pettit says that in Ontario Province less than a fourth of the honey is comb; so the crop-report committee makes its report in terms of extracted, including comb, however, by counting one pound of comb as two of extracted, taking the cost of production into account, and thus the average of 63 pounds is reached. He prods us folks on this side the line just a bit for confusing the terms Ontario and Canada. Ontario is no more Canada than New York is United States. Quebec Province produces more section honey than extracted; but the Ontario Association has nothing to do with that Province, and speaks only for its own Province.

After reading the well-given instruction for fastening wire in foundation, p. 799, some may still prefer to use the plan invented by Miss Emma M. Wilson, which she describes thus:

"After the foundation is put in place over the wire on the board, the whole thing is lifted off the board, and moved over the flame of a common gasoline-stove high enough not to melt the foundation, but to heat the wire enough to imbed it in the wax, letting the flame constantly follow the direction of the wire. The frame is moved with one hand, while the fingers of the other hand press very lightly over the foundation."

I think this makes a better job than the spur. The wire is hot while the wax remains cool, except where the wire melts it, and

the wire is so thoroughly imbedded that you would hardly know on which side it was. But this plan would hardly allow the wires to be curved.

I WONDER, Mr. Editor, if it will be too egotistical for me to take space here to tell what a good time I'm having in Washington, D. C. I left cousin Dave Redpath and his daughter Maggie to occupy the home, so that all care could be left behind; brought all my family, consisting of my wife and her sister, and for the first time in many a year I am giving myself up to the luxury of a vacation. With a thoroughly informed guide in the shape of an only son, we're doing the town and having the time of our lives. I supposed there was much to be seen and enjoyed in Washington, but I never dreamed how much; and they say "the half has not been told." I was heavily in debt before; but this adds greatly to the debt of gratitude I owe to the loving heavenly Father for his many, many loving kindnesses unto me.

REPLYING to ye editor, p. 822, bees paint the inside of a hive more or less with propolis; but is that exactly the same as having both inside and outside painted? At any rate, I've known the only painted hive in a cellar to be the only one having wet and moldy combs. [Paint inside and out might make a board more impervious to moisture than one coated inside only with bee-glue. Is it not possible that the wet moldy combs in that one painted hive to which you refer were due to some other conditions? We have for years used painted hives in wintering in one of our cellars, and we seldom have moldy combs in any of those hives. But in another cellar, a little cooler, the moisture and sweat are much more in evidence. If a powerful colony were housed in a painted hive, and a medium or weak colony in an unpainted one, we would naturally expect more moisture with the former than with the latter, and paint would not be the cause of it either. In other words, is it not possible that the one painted hive to which you refer had a stronger colony or a contracted entrance? or was it located in a part of the cellar that was cooler than where the other bees were situated?—ED.]

HERE'S what the bees did for us the season of 1913: A dozen or so of the poorer colonies were allowed to work on extracting-combs. That left 72 for sections. The middle of May another colony was made from extra brood of the 72, making 73 that stored in sections. Close credit was given each colony for all sections it gave, whether finished or not. So a credit of 100 sections might mean 95 finished sections and enough unfinished to be the equivalent of five finished. Note, too, that the credits are in sections, not pounds. The poorest colony gave 68 sections; the best gave 402 sections; the average for the 72 was 266.74.

Now don't ask me if there isn't some mistake in those figures. I've looked them over carefully, and they're all right. And then to think that an upstart of an editor should hint that I hadn't been giving "attention largely to honey-producers"! [This is almost a record-breaking yield of honey—nearly 20,000 lbs. of comb honey from 73 colonies. This is going some, especially for a man past 82 years of age. Of course, we know he had good help in his womenfolks; but they are not as strong and active as they were 40 years ago. If any of our readers have produced as large a crop of comb honey from 75 or even 100 colonies we wish they would hold up their hands.

We don't know what Dr. Miller is talking about, much less find the reference. Never mind; he secured a big crop; but, as he often modestly says, "I don't know." Yet what he does not know about producing comb honey is probably not worth much.—ED.]

WE are told that, when a bee stings, it will circle about until it draws the sting out of the flesh, and escape unharmed. I think that's exceptional. Oftener it takes an immediate forcible departure, leaving its sting behind. But when it does perform the circling act, the sting does not always come out of the flesh. One day last summer a bee stung my hand; and as it began to circle I watched it. First it circled in one direction for a time, then in the other. Then it tried to fly away. Failing in that it fell to circling again, and directly took flight, leaving its sting in my hand. [In our public demonstrations we have caused bees to sting our arms and hands. This is done by picking a bee up by the wings and gently pressing it against the flesh of the arm until it inserts its sting. We then let go of the wings, and immediately it begins to tug away in an effort to free itself. Generally it will whirl in a circle. Sometimes it will whirl one way, and then back up and whirl the other way. But in dozens of cases when we have tried this, we have never known of an instance where it extracted its sting. When it does free itself it loses its sting and poison-bag, and sometimes a small section of the abdomen. Unlike that of the yellowjackets and hornets, the sting of the bee has barbs. These latter cause the sting to stick in the flesh. Thus a honeybee can use its weapon but once; but a yellowjacket or a hornet can keep on jabbing because its sting is not barbed.—ED.]

SIFTINGS

J. E. CRANE, Middlebury, Vt.

J. L. Byer, page 670, Oct. 1, says: "For our locality 'bees always strong' is the only safe rule if best results are to be obtained." This is a pretty safe rule in most places if not everywhere.

* * *

On page 692, Oct. 1, in a footnote the editor says in regard to sac brood, "The only damage it does is to kill half a dozen or so of larvæ out of twenty-five or thirty thousand other individual larvæ in the hive." In my experience it is much more destructive than that. It is much worse some years than others. Perhaps the worst thing about it is that it is often mistaken by experienced beekeepers for foul brood, and the combs destroyed to get rid of it.

* * *

Mr. Chadwick is right, p. 519, as to the necessity of putting up honey in small packages if one wishes to secure the best price. Yet it seems doubtful whether it can be made to pay if the beekeeper can turn his time to profit at something else. "If fifty or a hundred leading producers could ship their honey to a central point to be graded, and put up in packages to suit the retail trade, this object could be accomplished and a neat profit could be turned into the pockets of the producers." Co-operation!

* * *

I appreciate what friend Doolittle says on page 710, Oct. 15, about difference in bees, especially in regard to temper. An inspector has a chance to learn about the disposition of bees as he goes from one yard to another, opening hives. I have found some as gentle as flies, and about as worthless, while others are as fierce and untamable as a tiger. I can't find words to describe their disagreeable disposition. It is the part of wisdom to get rid of such, and replace with such as can be handled, with care, with comfort.

* * *

P. C. Chadwick says, p. 600, Sept. 1, that both Mr. Foster and Byer condemn a record book where many bees are kept, and I believe they are right, especially in sections where there is much propolis, as I found years ago that I would get more or less propolis on the leaves, and they would soon stick together, and make a book a nuisance. Better by far a board five inches wide and four feet long. The number of the hives set near one edge and a set of signs as required set opposite each number. Soft pine or basswood is best for such a record-board.

* * *

On page 707, Oct. 15, I mentioned sawing a slot into the end-bars for the wiring of frames. After seeing it, Mr. S. A. Niver, of Jamesville, Cal., wrote me of a device for piercing the end-bars where you have no machine with which to do it. He says he had some 10,000 end-bars cut out before reaching his present location, but had no machine to bore the holes for wires, and so set to work and made one. Here is his description: "Just a piece 2 x 6, about 6 feet long, with legs. Another piece of 2 x 6, about one foot long on top of the horse, sliding forward and back with the brads to punch the holes in the end-bars, fixed firmly to the sliding piece, which is worked by a lever bolted through the horse (as a fulcrum) and the sliding block. Just straddle the horse; put the foot on the lever, put an end-bar in the guide slot, and give a little kick; then you have three holes, nice and smooth. The motion is short and easy, and you have both hands to handle bars with, besides being seated. It beats boring, both in speed and good work. You are Yankee enough to get the idea and make one."

* * *

In a Straw on p. 705, Oct. 1, Dr. Miller tells of his failure to secure as satisfactory results in preventing swarming as others by raising his brood-chambers up on four blocks and thus giving an abundance of ventilation; and the editor, in a footnote, makes what seems to me a very significant statement. He says, "While you have been breeding toward non-swarmers, Mr. Burt has given his attention largely to honey-producers." Now, it has occurred to me that the surest way to produce non-swarmers may be to develop to the highest degree the honey-gathering instinct. If we develop one quality it is often at the expense of some other. The draft horse is not likely to be a fast road horse, or the fast horse a good draft animal. Our best dairy cows are not the ones the butcher selects for his use. One of the best cows I ever owned would be the last one would select for beef. The stronger the instinct for gathering honey is developed, the less will be the disposition to swarm, I believe. I have sometimes had colonies where the instinct for swarming was much stronger than that for honey-gathering, and if they could not swarm they would do nothing.

Beekeeping in California

P. C. Chadwick, Redlands, Cal.

I believe much of my failure in direct introduction was due to the trouble I was having with robbers at the time. When a hive is opened long enough to allow the robbers to get in, there is going to be some trouble, and that trouble will fall on a strange queen as quickly as on a strange worker.

* * *

In the November issue of the *American Bee Journal* I notice that Mr. C. I. Graham was convicted in Nevada for violating the foul-brood laws and scattering the disease. This gentleman, I believe, is the same person who scattered disease in many parts of this State, and was prosecuted once that I have knowledge of, being convicted and fined the sum of fifty dollars.

* * *

November has laid the foundation for our next year's honey crop, heavy rains having fallen over the entire State—nearly three inches for the month so far, and I believe that is a fair average over the State. An abundance of filaree has already started; in fact, the whole earth is becoming a sward. Such a heavy rain at this time in the season is sure to be a lasting benefit, and an insurance of early bloom for spring breeding. There is a general feeling of encouragement, as well as belief that we have received only a little of our winter's moisture.

* * *

Dr. Miller, I am not sure that the food I eat has no effect on the color of my blood. Any way, I have heard of "blue-blooded" Yankees and "red-blooded" Southerners. Are you sure that it was the soil that made the difference in the color of your apples? At the present time I am laboring under the impression that a plant, its nectar or its fruit, does not acquire its color from the soil but from the air. There is a common belief that all plants come from the soil entirely, when the fact is that only a comparatively small amount of plant substance is taken from that source. Plant life and growth are for the most part comprised of matter taken from the carbonic acid in the air, and that, according to my knowledge, is the chief source of the solid matter of plants. Through the leaves the carbonic acid is taken from the air, then transformed into carbon, hydrogen, with a little oxygen, by various stages into starches, sugars, etc., the chief mission of the roots being to furnish water, nitrogen, sulphur, and phosphates in solution, which are combined in the plant structure to complete it. Aside from the water, which is later almost eliminated by the other elements taken from the air, the roots furnish only a small portion of the plant structure. The composition of honey is said to be four-fifths carbohydrates and one fifth water. The water may be taken all or in part from the soil; but the carbohydrates are taken mostly if not entirely from the air; hence the conclusion that honey is for the most part from the air and not the soil. Now, if honey is from the air principally, it appeals to my reason that it is the chemical action of the particular plant from which it is produced that colors the nectar. Conditions being largely the same in the plant food of the air, I fail to see where the difference in the soil on this or the other side of the fence would affect the color of the nectar, for that, so to speak, illustrates the change of soils in some localities.

Here in my own city there are two kinds of soil divided abruptly by a low ridge not originally more than fifteen feet high. On one side of the town is a long slope of red decomposed granite soil, and on the other a sandy gravel soil, evidently made by the deposits of the Santa Ana River from years and perhaps centuries of overflows. Every plant has its peculiar methods of manufacturing the elements it gathers into the parts that constitute its life substance; and if it should deviate from that process it would cease to be the same plant. If the coloring matter of honey is taken up by the roots promiscuously, as some seem to believe, it may vary in color; but if formed by the action of the plant's own little manufacturing establishment, as I believe it is, from elements derived principally from the air, then I see no hopes for those who claim the soil makes the change. I do not believe the soil changes the color of your apples, doctor. The influence of the sun and light may be the cause, for sunlight is the deciding element in the coloring of plant life; and no color can be produced in them without its influence. Look at the colorless apples on the inner branches of your trees that have had no sunlight, and have received only that portion of the air that has been drained of the carbonic acid by the outer leaves. It may be that the elements taken up by the roots, combined with those collected by the leaves, have the deciding action in coloring the nectar and fruit. On that point I am not fully decided, and am open to conviction. The above, however, is my opinion at the present time.

Beekeeping in the Southwest

Louis Scholl, New Braunfels, Texas.

NOVEMBER HONEY-FLOWS.

When you meet Northerners on the trains (from almost any State in the North), and you hear them talking about cold weather there at this time of the year it seems hardly possible that there should be such a great difference in the climate as compared with the warm, almost summer weather we are having here in the southernmost portion of Texas. What is more surprising is that the bees here are in the midst of a heavy honey-flow, storing much honey and building the prettiest white comb honey. The source of this abundance of nectar at this time of the year is a very thorny, rough, and otherwise unimportant-looking brush, called "coma." Whole areas of hundreds of acres are in immediate reach of some of the apiaries here, and these thickets are so dense and thorny in most places that they can not be penetrated by man afoot or horseback before cutting a path through them.

The small whitish star-shaped flowers cover the entire limbs and branches densely, and yield abundantly. The honey is of light-amber color and of fair flavor, although it has a peculiar twang to it. It reminded me of the twang of buckwheat honey, but is not so apparent, and the honey is not at all dark in color. Those who have acquired a taste for this coma honey seem to prefer it to the milder-flavored honeys, very much as the "buckwheaters" are fond of the stronger-flavored buckwheat honey.

* * *

REAL UP-TO-NOW BEEKEEPING.

On my trip through the Rio Grande Valley I had the great pleasure of stopping over night and a part of two days with my old friend Grant Anderson, of San Benito, Texas. Mr. Anderson is one of the leading queen-raisers of the country, and few are so ideally located as he is. He dwells amid a profusion of the honey-yielding brush and other plants, and in a rich irrigated section, with plenty of unbroken or "wild" land to make it an excellent honey location as well as being admirably suited for queen-rearing. And, further, he resides near the bank of a great water-course, or "arroyo," as it is called. He has a large gasoline-launch with which he motors from one apiary to another. All his apiaries are located on the banks of this arroyo, and the "Queen B," as the launch is called, not only carries Mr. Anderson and his sturdy sons, who help their father in the work, but also all of the supplies. All of the honey is freighted home on this same "Queen B." Talk about pleasures of real motoring without the troubles of bad roads, tire troubles, and all those things common to road motoring! The early morning ride that I enjoyed caused a thrill of enthusiasm to penetrate every part of my being. Here I saw real up-to-now beekeeping, with the expense of travel to and from the beeyards cut down to the minimum.

* * *

IN EXTREME SOUTHWEST TEXAS.

The writer has been on a lecture-trip for the State Department of Agriculture for an entire month, with one or two day and night lectures every day. The trip took us through what is known as the mid-coast country of Texas, and then through the Rio Grande Valley to Brownsville. At this point we also made a short excursion into Mexico.

This trip is especially interesting, for the reason that the lower Rio Grande Valley is well adapted to beekeeping, almost every one of the great number of shrubs and other plant growths yielding more or less nectar or pollen. All the main nectar-yielders characteristic of Southwest Texas, the mesquite, catclaw, huajilla, coma, and dozens of others, are here in abundance. There are yet large areas without any bees; and that territory adjacent to the large irrigation projects is the most favorable location for apiaries.

One thing is certain, however—a great deal of this yet raw land will be rapidly put into cultivation; but there being so much of this, there will be many good locations for apiaries for quite a long time.

The climate here is almost ideal, and plenty of water is in easy reach. Wherever the irrigation canals have been extended makes it possible to grow a great variety of things associated with semi-tropical conditions. Oranges and other citrus fruits yield in abundance if properly cared for. The beautiful homes with the grounds planted with palms, banana plants, and other ornamentals also as well as fruit-bearing trees and plants are very attractive indeed.

One thing I want the reader to remember is that this is not a place to get rich quick without mixing muscle and brain with the soil and water.

Conversations with Doolittle

At Borodino, New York.

COMB FOUNDATION IN SECTIONS; THE MODERN SECTIONS; THE OLD TWO-POUND SECTION.

"I wish to get my sections all ready for the season of 1914 this winter, and I wish to know how much foundation to put in each section."

"I think the general custom at the present time is to fill each section full, or as nearly so as may be, in order that the combs may be attached securely to the section all around. This, with the incentive given the bees to draw out from this sheet of foundation a full comb all at once, and cap the whole over at one time, not only gives a larger yield of section honey, but a much more marketable product as well."

"Yes; but is it the best thing for the beekeeper to do? I was talking with an old man the other day who had kept bees for nearly half a century, and he told me that those making a specialty in bees and comb honey were very largely to blame for the vast amount of work devolving on the comb-honey producer, as well as for the low price of comb honey as compared with the high cost of living, through the advance in price of what such honey-producer had to buy with the cash obtained for his honey. He said that some thirty-five years ago they had a two-pound section box of a size which exactly suited the consumer; that this box was glassed so as to protect it in handling, also to keep out flies, ants, and dust. In the top of each box was a starter of natural comb, and honey stored in this manner brought the producer from 25 to 40 cents per pound, that price being profitable to the producer, and a joy to the lovers of comb honey. Now the average weight of sections when filled is about 14 ounces, thus making the producer handle two sections where he handled only one before; and by using plain sections with no wider sides than ends, no glass can be used to keep out vermin, flies, or dust, and no protection in handling is possible. He asked me this question: 'When those familiar with the handling of these plain sections occasionally give them a bruise or dig, what can be expected of the novice or retailer?' He then went on to tell how he had seen, in market, cases of modern honey being retailed from the counter, the combs of which were bruised and leaking, where fingers had multilated the nice cappings in handling till all was a dauby and sticky mess, to the disgust of the seller; and winding up he asked, 'Who is responsible for this state of affairs?' As I could not answer, he said with great emphasis, '*The beekeeping specialists.*'"

"This reminds me of what I used to hear years ago. There may be a grain of truth regarding beekeepers causing themselves more work and trouble by bringing in the one-pound sections, for, so far as I know, consumers never called for any thing smaller than the two-pound section until the smaller ones were brought forward by the beekeepers themselves. And I must admit that, with the average person, the liability to 'finger mark' on the nice cappings to the comb has some truth in it also, but hardly enough to make good the disadvantages of the older things used a third of a century ago. But you have not touched on the foundation matter which you wanted to know about."

"Yes; I will come to that next. This same man said that beekeeping specialists had brought out comb foundation, and urged it, till nearly every one thought he must pay out a good lot of the selling price of comb honey for the purchase of this foundation, and do a whole lot of extra work in order that the sections might be filled with it. And not only this extra cost, but it makes the honey tough to eat. 'This last,' he said, 'is really a more important subject than many of the beekeepers realize.'"

"But did he not tell you something about the other side of the matter—how, with full sheets of thin foundation, the bees do much more work in the sections; how the cells are regular and even; how it is a pleasure to look at the even cappings of the combs, and, above all else, how honey built on foundation will stand shipment to distant markets two to one better than that built by the bees from a starter of natural comb? I fear that your old friend has been using foundation made for the brood-chamber rather than that for sections. That made for sections at the present time often runs as thin as any natural comb ever built by the bees—so thin that there is 18 square feet in one pound. This wax may not be quite as brittle as the white flakes produced by the bees, but it is so thin that no reasonable consumer will say aught against it. With such thin foundation as this its advantages are so great that it is not likely it will be dispensed with when raising comb honey; and if you use the thinnest obtainable, and put full sheets in your sections, I think you will not injure the market for comb honey in the least, and you will have much better success in the pursuit of apiculture besides."

General Correspondence

BEEKEEPING IN ONTARIO

A Glimpse of Some of the Apiaries where Honey is Produced on a Large Scale

BY H. H. ROOT

Continued from last issue

On the last day of my visit in Canada, as described in the last issue, Mr. Holtermann and Glen took me in their machine across the country to visit other beekeepers in that locality. I wish that I might give a full account of our trip that day through the beautiful country in southern Ontario, and tell more about the beekeepers that we met, but it will be impossible to go into much detail.

We called at the apiary of Mr. Iver Holtermann, another son of R. F. Holtermann. As would be expected, he also uses the twelve-frame hive and winters in the large cases similar to those used by his father. Fig. 10 gives a glimpse of his yard at a time when the extracting was about half finished. Mr. Ivar Holtermann also has a power extractor, although it is the regular eight-frame size, and an engine and honey-pump. He does most of his extracting, uncapping and all, himself. By the way, when I went over to Canada I had a feeling that the twelve-frame hive was about two frames too large; but my feelings in this respect grew weaker while I was there, and have been much less perceptible ever since. It is true that it takes a pretty husky man to lift around twelve-frame supers of honey; but aside from the one disadvantage of the greater weight, I can not really see much to criticise in the twelve-frame hive. They certainly enable the beekeeper to control swarming more easily; and if, for any reason, a smaller brood-chamber is desired, it is very easy to use a couple of dummies. In other words, the twelve-frame hive certainly permits as large or as small a brood-chamber as any one could possibly want. It is easy to have a ten-frame or even an eight-frame brood-chamber in a twelve-frame hive, but rather difficult to have a twelve-frame brood-chamber in a ten-frame hive.

We called at the home apiary of Mr. James Armstrong, whom I remembered as being for a time in charge of the Ontario honey exhibit at the Pan-American Exposition. Mr. Armstrong was away on an inspecting trip, as he is a district inspector of Ontario; but we made ourselves at home

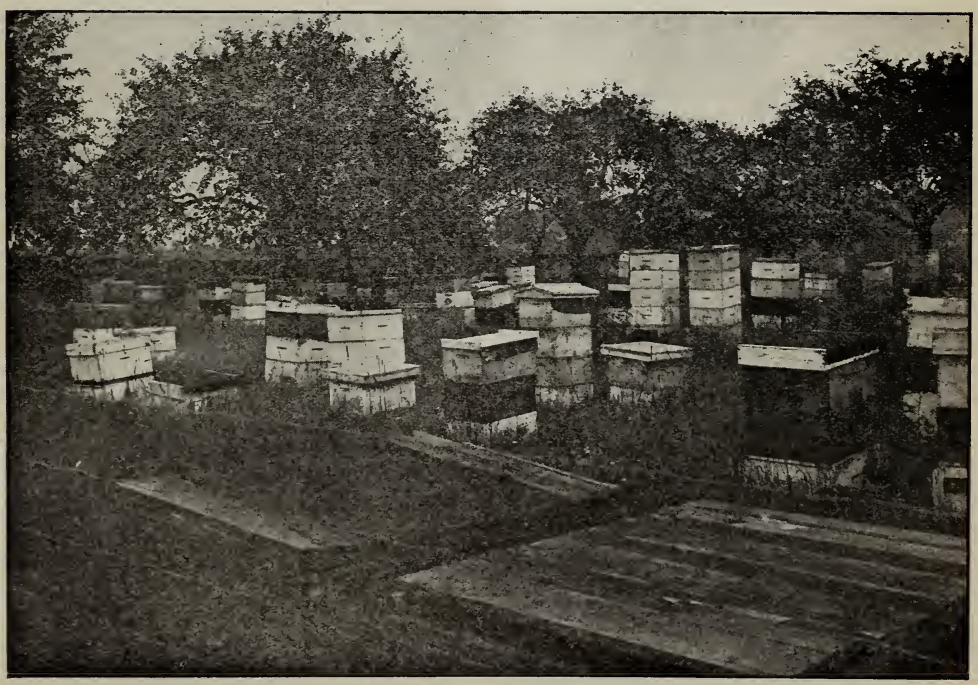


FIG. 10.—Apiary of Ivar Holtermann.

FIG. 11.—Apiary of Jas. Armstrong, Inspector of Apiaries for a district in Ontario.

in his yard, and took a picture of one corner of it which is shown in Fig. 11. The location of the yard made it impossible to secure any thing like a comprehensive view of the whole apiary. Mr. Armstrong uses eight-frame hives, as will be noticed, and he expected to get at his extracting soon. Hives tiered up in this way always look good to me.

There is considerable sweet clover along the roadside in certain parts of southern Ontario; but as yet it is still considered a noxious weed, and the farmers are constantly neglecting important work to keep the sweet clover along the roadside mowed down. When the experiment stations of so many of our States are publishing bulletins telling of the value of sweet clover, and when the United States Department of Agriculture has published such a complete bulletin telling of the value of sweet clover to the soil, etc., it seems strange that there should still be so many localities, in our own country too, where hundreds of dollars are spent right along in the frantic attempt to wipe out every sprig of sweet clover that dares show itself above the surface of the soil. If it were not such a serious matter it would seem ridiculous to think of all of the time and money spent to combat so terrible(?) a foe. Sweet clover is not a foe to the farmers at all in the first place; and in the second it is the easiest thing in the world to kill off if it is not wanted. In some places in Ontario it grows very luxuriantly, Fig. 12. One of the roads that we passed had a solid bank of white sweet clover on the left, and another solid bank of the yellow variety on the right, Fig. 13. The shorter, less bushy growth of the yellow sweet clover, shows plainly.

We called at the apiary of Mr. Arthur F. Hodgson, who spent three seasons with Mr. Holtermann, but were disappointed in not finding him at home. We took a picture of his escape-board, the principal features of which were set forth in his article on page 577, Aug. 15. The picture in question is shown in Fig. 14. Mr. Holtermann has never used bee-escapes to amount to any thing, for the reason that honey removed by the use of the ordinary bee-escape board is cold, and therefore very difficult to extract rapidly. The new board certainly overcomes this undesirable feature; and Mr. Holtermann, who has been so long an advocate of shaking and brushing bees from extracting-combs, told me just before I left that he believed he would use a couple of hundred escapes of this pattern himself another season

Since the illustration of this ventilated escape-board in the Aug. 15th issue there have been a number of objections suggested, which may or may not be serious. It is true that a wire-cloth escape-board is not a very rigid affair, and it is possible that they would get broken pretty easily, especially if the bees build brace-combs to the wire cloth or when the frames were badly

FIG. 12.—A luxuriant growth of white sweet clover near Selkirk, Ont.

stuck to the brood-chamber. Doubtless rather more care should be taken in loosening this type of board than the regular more rigid type. Mr. Ivar Holtermann admitted that bees attach brace-combs to the wire cloth somewhat, but thought this not a serious objection. It has been suggested that bees would not go down out of a super as readily, since they can see the light from the entrance through the wire cloth; and, finding themselves confined, might spend their time trying to get through the wire cloth directly above the entrance. Those who have used this board, however, insist that the bees go down through the escape just as readily as though it were located in the solid board.

In parting with Mr. Holtermann at the station, after the delightful trip that we had had, I renewed my promise to "come back again" next year. As the train moved away, I reflected that my friend is a successful business man who believes that there is more in life than the mere making of money. Even in the summer time when business obligations press hard he often takes the Sunday services in churches surrounding the section where his bees are located, thus making himself one of that great and steadily increasing class of Christian business men who believe in mixing religion and business.

HANDS ACROSS THE SEA

BY JOHN SMALLWOOD

I have been a constant reader of GLEANINGS for some time, for I greedily devour all literature anent bees or beekeeping. You know what Bacon, in the quaint phraseology of his day, says of books: "Some books are to be tasted, others swallowed, and some few to be chewed;" and GLEANINGS is one of the "few to be chewed." Yes, you have to chew it, and digest it too, because the modern beekeeper who would be abreast of the time must know what you are doing over there. We have scientific men galore in Europe, yet all the knowledge and all the discoveries are not to them. On your side, too, important investigations have been made, and with great success, in bacteriology, in the diseases of bees, in queen-raising, and in the best way to raise and market honey, and we are willing to be taught.

But it is not pleasant to note how seldom are the contributions to your columns which reach you from this country. They are almost as rare as flies in amber, or as the proverbial plums in a sailor's pudding. Why? I am sure it is not the fault of your editorial staff. The same arguments which compel me to read you apply also to you. Your staff are broad-minded enough to wish to gather in all that the world has to say

FIG. 13.—Sweet clover bordering the road—the white variety on the left and the yellow on the right.

about our craft. After sifting away the chaff, there is a bulk of wheat left. Why, then, is it? I can think of only one reply, not to our credit, and that is that we over here are too lazy. We are satisfied with contributions to our *Bee Journal* and *Record*—very good papers, and not to be surpassed for useful reading-matter; but we should keep more in touch with you.

Now, even across the Atlantic, I think I can hear some one say, "Practice what you preach. Set the example, and write yourself more frequently." Well, there are two or three ways of looking at that proposition. First of all, there are your editors to consider. They might not think my manuscripts worth the paper they are written on, or the penny stamp it costs to post, and forthwith throw it in the waste-paper basket (which I am informed is rather capacious), with the ejaculation, "What rubbish!" I almost think they would be right. When I come to think of it, my bump of conceit must be fairly well developed to have the "cheek" to tell other people what to do. Another way of looking at it (this time from my point of view), I could not pretend to do it. It is rather too tall an order. There are many "specialists" whose writings I am sure would interest you. I only attempt a chatty letter, with just occasionally a glimmering streak of wisdom, a friendly something now and then from the old country.

"The old country!" Why do we like you better than the other boys? Sentiment is out of fashion, does not exist, it is said. Don't you believe it. It can not be gotten rid of. Why, you might just as well tell me the sun does not shine, or the earth does not go round. Why, then, do you call us "the old country," and why do we give you the place nearest to ourselves? (I seem to be always asking questions and answering them myself.) Because you are so knit together with us by blood relationship. Is there a single family in Great Britain, high or low, rich or poor, which has not got its offshoots with you, forming units of your great nation? and "blood is thicker much than water." Do we not both speak the same language? and, being related in kinship, are also related in the currency of thought and literature. These are strands in the mighty cable which lashes us inseparably together.

But we beekeepers—have we not another link to unite us? "There is a freemasonry in beekeeping; a beekeeper is a brother to fellow beekeepers all the world over." These golden words were said to me by Mr. T. W. Cowan. Would you have an object-lesson, an example? There is one at your door. Refer to the November issue of your contemporary, the *American Bee Journal,* and its very last words in the article, "With the Editor in Sunny France." "We are getting badly spoiled, for we are welcomed and feasted, and complimented everywhere. We did not realize that we could find so many friends in Europe." This, of course, might be expected to happen to Mr. Dadant, whose name, of course, is known where beekeeping

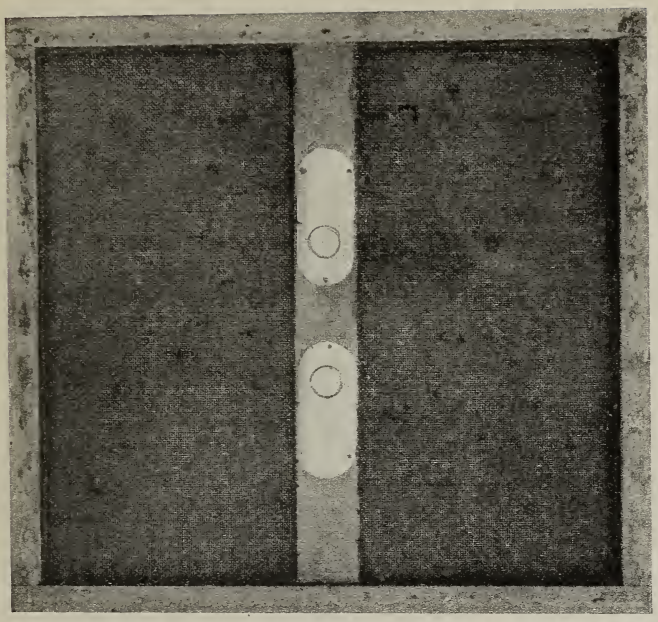


FIG. 14.—Arthur F. Hodgson's ventilated bee-escape board; heavy wire cloth is substituted for the thin board, and two escapes are used.

is known; but wandering over sunny France and fertile Italy with our Mr. Herrod, I, too, have had the same experience, the same open-hearted fraternal welcome. The fact of being a beekeeper was sufficient. The word was an "open sesame" to the hearts and welcomes of other brothers of the craft; ay, it was even a key to the knowledge of our hosts; for what beekeeper keeps his experiences locked within himself? We have no trade secrets. Your paper and every bee-paper in the world teems with enquiries from correspondents, neophytes, who would learn their faith, and you are pleased to teach them the A B C of Bee Culture, so that some day they may arrive at the X Y Z of perfect apiculture.

London, England.

A NEW METHOD OF SHAKING TO CURE FOUL BROOD

The McEvoy Plan Simplified; Inducing the Bees to Use up all Diseased Honey by Building Combs on Starters Attached to the Cover

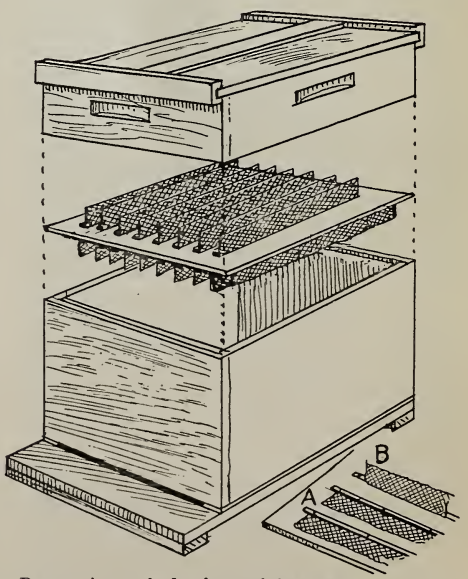
BY W. A. BARSTOW

In treating foul brood when bees are shaken on to starters of comb foundation in regular frames these frames have to be shaken later on, one at a time, and this gives the bees on the last few frames a chance to eat some of the infected honey that possibly may be stored in the new combs built, and there is danger of getting some of this in the next comb that is drawn out.

My plan is to shake all the bees and queens into any kind of box of fair size (or a hive-body) having a plain cover the same size. On both sides of the cover board I tack two-inch starters by means of small nails and thin strips of wood, which starters are somewhat shorter than the length of the cover so that the bees will not stick them fast to the ends of the box. I put seven or eight starters on each side of this cover.

This cover prepared with starters on both sides I place over the box, and for the purpose of protecting the starters on the upper side I put an empty super over it with a regular hive-cover on it.

After the bees have been drawing out the foundation for three or four days I lift off the empty super and set it to one side, take up the cover with the bees, and give a quick shake, dislodging all the bees with one jerk. Then I turn the cover over, thus giving the



Barstow's method of providing starters for the bees to work on when being treated for foul brood. A quick jar dislodges all the bees at once.

bees a new set of starters to work on, and put the empty super back on again, thus covering up the combs that the bees have made. By this plan I can shake a dozen colonies in the same time that would be required to shake one having starters in frames, and none of the bees have a chance to eat any of the diseased honey, for it is out of the way before they know what has happened.

In the evening or early morning one can make the rounds again, scrape off the combs on the upper side of the covers and dispose of them.

At the end of the second period of four days the bees can be shaken once more, this time into their new hive on frames of full sheets of foundation or combs, with or without brood, and all disease is gone.

The boxes used to shake the bees into can be cleaned out and used again, if necessary. If one desired to use wired starters to prevent any combs from breaking, this could be easily accomplished by nailing cleats or ends on the shaking cover the proper distance apart just to fit inside the box when the cover is in position, said cleats to support the wire. However, this would make more work, and it would be harder to put on the starters and also harder to clean off the combs. With the small amount of comb built it is not very heavy, and the danger of breakage is not great.

San Jose, Cal.

THAT SNOW BLIZZARD AT MEDINA, NOV. 9, 10

Loading that Car of Bees for Florida

BY E. R. ROOT

On Sunday, Nov. 9, as already reported in these columns, we had a blizzard of wind and snow that exceeded any thing we had had for the time of year in the memory of the oldest inhabitant. The front cover page of this issue shows a small section of our apiary, house-apiary in the background, the evergreens for windbreaks, and the barn in the rear. The little mounds of snow show where the hives were buried. Notwithstanding the apiary was thoroughly protected by windbreaks from the evergreens that are supposed to eliminate all driftings of snow, it will be seen the hives were clear out of sight.

The accompanying engravings will show the difficulties under which we labored in order to get our bees out of the snow and loaded on to the car that was to take them to Florida. In some cases (see Figs. 1 and 2) the men had to work up to their waists in shoveling out the damp heavy snow that

FIG. 1.—Hunting bees—not in the woods, but in the snow. Standing waist deep, a big cake of snow was first removed, exposing the top of the hive.

completely enveloped the hives. In another view (Fig. 5) will be seen the men loading the hives on a low-wheeled wagon with wide tires. It was impossible to use any sled or bobs on account of the depth of snow, and from the further fact that the runners would

FIG. 2.—Lifting up the hive through three feet of snow.

FIG. 3.—Hives pulled up and resting on the top of the snow, three or four feet above the ground.

cut through the loose damp snow to the bare ground.

It took us a day to dig those 300 colonies out of the snow and haul them to the warehouse where they could be put on the car. At first we decided to leave the bees under the snow and defer starting the car until after the snow had melted away; but examination in many cases showed that the bees were suffering from the want of air, as the snow was exceedingly dense and heavy, and because, further, in a few instances, the entrances were sealed with ice. We decided, therefore, that it was best to dig the bees out and put them in the warehouse, as there was no knowing what would happen if severe freezing weather should set in later. But it turned off warm, followed by slow rains; and on Nov. 14 the bees started on their long journey to the Southland. Mr. Marchant in charge reported that the weather was exceedingly warm, and he had some difficulty in keeping the bees quiet. We had planned on cold freezing weather. After it began to warm up we regretted having moved the bees off their summer stands. But it was too late to put them back, as the bees could not have been put in their original location: and the confusion of flight would have been enough to cause considerable trouble as well as a heavy loss of bees in the snow. We were, therefore, compelled to start whether the weather conditions were favorable or not, even though the bees were roaring, indicating their desire to get out and enjoy the warm balmy air. But all is well that ends well, and the bees arrived at destination in good condition despite their noisy roaring.

In the matter of ventilation, the bees were provided with a wire-cloth screen on top, nailed to a two-inch rim and a wedge screen in the entrance. When we get ready to move the bees from the Southland to the North, the bottoms will be removed entirely, and a two-inch rim with screen will be secured to the top and bottom of each hive. But we had expected to move the bees south this winter in chilly or freezing weather, and it seemed unnecessary to provide for more ventilation than at top and entrances.

The bottoms were secured to the hive-bodies by means of double-pointed crate staples (see Fig. 6). A two-inch rim with wire screen was secured to the top in the same way, on the day before we expected to move, or, as the sequel proved, the day before the big snow blizzard came on. But, fortunately, we placed on top of the screens ordinary super covers, and over these telescope covers as seen in the accom-

FIG. 4.—Carrying to the wagon.

FIG. 5.—Loading on wagon, the first stage of the 2000-mile journey to Florida.

FIG. 6.—Piled on the warehouse landing waiting for the car. Upper rims and screen already on, the covers left on also, for the time being.

panying illustrations. The intention was, of course, to remove the super and telescope covers in case it would prove to be too warm for the bees in the car; but before loading they were left on.

Under Fig. 7 will be seen a little note describing the means for providing entrance ventilation. A straight piece of wire cloth, unless secured by strips of wood, will not hold its position readily over the 7/8-inch-deep entrance; and, what is more, it presents only 7/8 inch by the width of the hive of air surface. By bending the strip of wire cloth into the shape of a letter V, and crowding this V-shaped piece into the entrance the air surface will be increased three or four fold. On one arm of the V another angle is formed, as seen in the diagram accompanying. The purpose of the

last fold is to provide a place for nailing at the top, as shown in Fig. 7.

FIG. 7.—Tacking on the entrance screen. These screens hold their position by friction, and do not need to be tacked until just before hives are loaded. A wide piece of galvanized wire cloth is bent in the shape of a long V or wedge, with a right-angle bend half an inch from one of the edges. The point of the V or wedge is pushed in until the right-angle bend comes flush with the front of the hive, the other edge lying flat on the alighting-board, thus affording plenty of surface for tacking. This plan gives much more surface than a plain vertical screen, and the bees can not crowd down, shutting off the air at the bottom.

In moving bees to outyards, if we close the entrances at all we put these bent pieces of wire cloth in the entrance, without nailing. Friction is sufficient to hold them in place, because the V-shaped strip of screen has a tendency to wedge against the top and bottom of the opening.

It would almost seem as if the fates were against us when we get ready to move a carload of bees. A year ago last spring, when we started to move our second car of bees from Florida we were nearly overwhelmed by a flood. The accompanying il-

FIG. 8.—Loading into the car. Regular cover removed, a super-cover being left over the screen temporarily.

lustration shows the difficulties under which we worked at that time. Well, now, we did not expect floods or any thing else when we started south this winter. We certainly did not expect a blizzard of snow—something that never before had been seen at this time of the year. But it came just the same. Luck has been against us at the starts; but we do not mind it if it is only with us *at the finish.*

BEES AND COLLEGE FINANCES

How a Young Lady Paid a Considerable Part of Her Expenses while at School with Money She Earned with Bees

BY FLORA M'INTYRE

[For several years back an impression has gone out that a certain young lady in California put herself through college with the money she earned from her bees. Learning that it was Miss Flora McIntyre, of Ventura, Cal., we inquired if it would be possible for us to secure the particulars. We began by coaxing the mother to get her daughter to tell the story. We later got in touch with the young lady herself. The mother, Mrs. Harriet Wilkin McIntyre, is a daughter of the late R. Wilkin, one of the early honey-producers of California. Mr. Wilkin, with two or three other pioneers in the early days, about the time gold was discovered, showed to the beekeeping world that California had something besides gold within its borders, and that was—honey of a superior quality and quantity.

We were interested in securing this story, for two reasons. First, because there are many young men and women who are anxious to secure an education; and if they could use bees to contribute to their support while in college they would gladly avail themselves of the opportunity during vacation time. Second, we desired to get this story on account of the parentage of the young woman. Her father, J. F. McIntyre, was for many years proprietor of the famous Sespe apiary, where 500 colonies were kept in one yard year after year. This apiary is one of the most beautifully located, so far as mountain scenery is concerned, of any in the United States.

Mr. McIntyre was the first user of a power-driven reversible extractor in the United States if not in the world. It was one of his own devising; but instead of using a gasoline-motor he derived his motive force from a water motor fed by a stream on the mountain sides. This extractor was an automatic reversible, somewhat different from the style now made, but nevertheless one that did its work satisfactorily. Notwithstanding that this was a success, it has taken some years for the rest of the beekeeping world to catch on; and now power-driven extracting outfits are coming to be quite the fashion.

Mrs. McIntyre, a daughter of R. Wilkin, as al-

The flood hindered us in the second shipment.

Harriet Wilkin McIntyre with her five daughters, her son, and two sons-in-law. Flora McIntyre indicated by cross.

ready mentioned, would naturally marry a beekeeper; and so it is nothing strange that one of the girls, Flora, should have been a "victim of the bee fever from infancy," as she says.

We are very glad to present this story, not alone because of its intrinsic value, but because of the interesting photos that accompany it. The young lady very frankly tells her experiences; and the fact that these experiences cost her something should be a warning to others not to overdo while at school. As we know from past experience in our old college days, the usual college curriculum will give any student all he can possibly do without other work.

We will now let Miss McIntyre tell her own story. It is worth reading.—Ed.

The bees have sometimes been given the credit of paying my way through college. That is an exaggeration; they merely helped make it possible for me to spend three years at the University of California. The following is an account of what they really did in behalf of education—as nearly accurate as I can give it from memory.

The opportunity came after a severe illness had cut in half my third year at high school. With the arrival of the second spring I was strong enough to work with the bees, and was given the privilege of conducting the queen-rearing for my own profit, provided I would supply at half price the queens needed for requeening in the home apiary.

I have been a victim of "bee-fever" from infancy, so the enterprise was a pleasure in itself. I had also helped with the bees ever since I could remember, which experience made it practical. Moreover, I was firmly determined to go to college some day, but was much in need of the wherewithal. This gave an added reason for my accepting with alacrity the work with the bees.

If I remember correctly I used some twenty-five eight-frame hives divided in two by a partition running lengthwise, making fifty nuclei in all. I began work with the swarming season, raising my queens in dipped cells. These were supplied with larvæ from selected colonies in the apiary, and placed in hives preparing to swarm. The nuclei I filled with bees by dividing regular colonies when they swarmed, giving two combs of brood with the adhering bees to each nucleus, substituting a queen-cell of my own rearing for those I cut away.

I filled all the orders that came that year, without any advertising, the proceeds of which amounted to a little over one hundred dollars, and from the requeening at home I made fifty dollars. By doing the uncapping during the extracting season I added about forty dollars more. In all I dedicated that season some two hundred dollars to my college course; and when, that August, I had the privilege of attending a National beekeepers' convention in Los Angeles, and seeing there many of the notables I had read so much of in the bee journals I felt that I was almost a full-fledged beekeeper.

The McIntyre children, Flora McIntyre second in the row.

I wore in the apiary that season a costume I had used at school when playing basket-ball. The blouse and short skirt were of blue demin, and the bloomers of a lighter-weight material. I added leggins, and, of course, long-sleeved gloves and veil. This costume was very satisfactory; but I doubt whether it would ever be worth while to make a special outfit, since there are always dresses on hand that need wearing out, which will answer the purpose very well.

To get back to the queen-rearing: The next two summer vacations were too short to allow me to undertake the work. But during the third year, on April 18, came the San Francisco fire. This brought my freshman year at college to a sudden end; and, although I stayed over at Berkeley a week by permission from the authorities to cross to the city and see the ruins I was home by May 1, and soon began work. I think I used about 75 nuclei that year, and I sent out advertising cards among California beekeepers. Owing, however, to the late start, and the absence of an order for requeening at home, I added only one hundred dollars to my fund. The vacation following I added seventeen dollars more by uncapping. Therefore three hundred and twenty-five dollars was about the amount of help the bees gave.

To those who may think of doing likewise, it may be of interest to know that that amount paid my incidental expenses (books, stationery, dues to student organizations, etc.), including about one hundred dollars for traveling expenses between Berkeley and Ventura during the three years I was at college. It could have been done with less, as I included a good many tickets to concerts and good plays. I made it a point to see as many as possible of the great artists who appeared in San Francisco, Oakland, and the Greek theater on the campus at Berkeley, because I considered these a part of my education, and I was not sure that I would ever have such an opportunity to see them again.

My board and room I secured through assisting with the housework in a Berkeley family. My clothes I made at home, and my mother gave me about two hundred dollars, which, I have calculated, just about covered the expense due to illness and the seventy-five dollars I had left at the end of my third year.

I would not, however, advise any one to follow my example so far as to undertake extra work during the college year. That plan gives practically no time for recreation during fifteen hours or more of the twenty-four, and that means almost no time for "student activities." It is taking chances with one's health, besides. If I had it to do over again I would borrow the money to pay for my board and room, for I think

Flora McIntyre in her working-costume.

that a debt would be a lighter burden than ill health.

To make this tale complete I must state that, when I came home with one more year between me and graduation, I was compelled by illness to take to my bed, on which I remained two years, where, in fact, I have spent half of the five years that have just passed, and from which I now send this little sketch.

Ventura, Cal.

BEEKEEPING IN OREGON

BY H. F. WILSON
Entomologist Oregon Agricultural College

With such data as we have at hand, it would be impossible to estimate correctly the status of beekeeping in Oregon. Many farmers keep from one to several stands for home use, and in all parts of the State one may find from a few to many colonies that not only furnish honey for the home but also give a market surplus.

In looking over the data secured in a recent farm survey of this State, one might be led to believe that most of our honey is produced in southern Oregon; but in that it is misleading. The division known as central Oregon probably has the greater number of large commercial apiaries, with the Columbia Basin second and southern Oregon third. These facts are not shown in the survey, for the reason that it was taken as a general farm survey, and it so happened that of the five or six commercial apiaries in southern Oregon the largest happened to be recorded. In the survey of central Oregon it so happened that out of a dozen or more commercial apiaries only two of medium size were recorded. With these exceptions, other data at hand show that the average arrived at is fairly representative of existing conditions.

The United States census for 1910 reports one farm in every five as having bees; but during the last two years the number of colonies has increased, both in the number of large apiaries and with the number on small farms. A considerable increase is due to the number secured by orchardists for pollination purposes.

With data on hand, and the figures from the United States census for 1910, a distribution map has been made which shows some very interesting data. Each figure represents 1000 colonies, showing an approximate total of 50,000 colonies with a value of $250,000. The writer believes that,

with the present average prices, an average of five dollars per colony is not too high, although the census report gives the total valuation of 47,285 colonies at $150,164.

Of the 50,000 colonies, less than 20,000 are found outside of the Willamette Valley and coast divisions. Apparently, then, the honey industry is in western Oregon, but in reality only about half as much honey is produced in these two divisions as in the others. Many of the bees in the first two sections are barely self-supporting, and their only value is in pollinating the fruit-trees. The surplus gained from the more thrifty colonies is generally small. The large number in these sections is due to the number of small farms with from one to thirty colonies.

Taking the State as a whole, individual apiaries produce from a few pounds to a carload (a carload is figured at about 40,000 pounds). The number of colonies owned by individual beekeepers varies from a few to six or seven hundred.

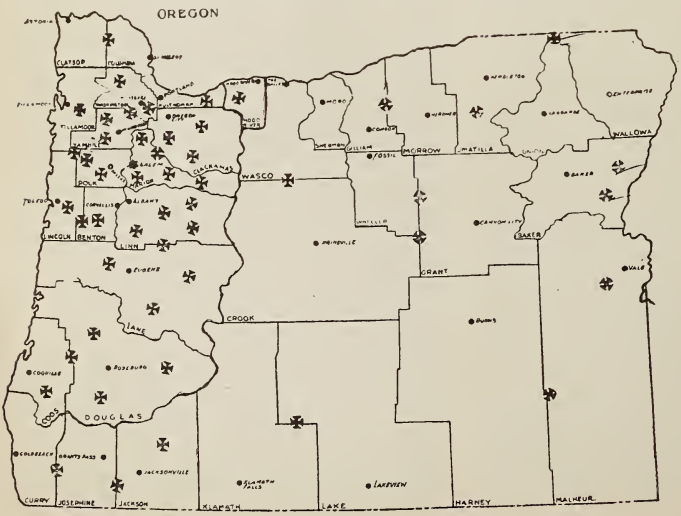
In addition to the honey-producing apiaries, there are situated at different points in the State three queen and bee rearing apiaries.

Discussing each region separately, we find that in the Coast division some of the finest honey produced anywhere is secured from wild plants such as vine maple *(Acer circinatum* Pursh.*)*, and a plant known as fireweed (*Epilobium spicatum* Lam.). No large apiaries are found in this section, and the average surplus is small. Section honey only is produced, and only a small amount reaches outside markets, as the local demand is greater than the supply. In this section climatic conditions regulate to a great extent the amount of honey produced. Continued rains in the spring during the blossoming period of fruit-trees and other plants often result in a decreased surplus.

In the Willamette Valley section, conditions are extremely variable. In the valley proper there are no commercial apiaries of any size, and in bad years many bees starve in the fall for lack of stores. Several men in this section have found that it is more desirable to produce extracted honey as the bees seem to gather more honey in this way under adverse conditions. Alfalfa can not be grown with success; and as there are not many flowering plants to be found after July 1, except back in the hills, the surplus must be gathered in the spring. Continued spring rains are also a factor here, and oftentimes the blossoming period passes without the bees being able to spend more than a few days in gathering honey. Getting back on to the slopes of the Coast Range and the Cascade Mountains more favorable conditions are found, and a fair surplus can usually be secured from the more variable honey-producing plants and the later blooming season.

The division known as southern Oregon, comprising only three counties, is different from the other sections of the State in that the region is not arid, but does not have as much rain as the Willamette Valley and Coast divisions. In addition to several wild honey-plants which grow abundantly in this section, alfalfa is grown successfully, and fruit-bloom offers a fine pasturage while it lasts.

The other three divisions, central Oregon, the Blue Mountain District, and southern Oregon, have conditions which are practically the same so far as beekeeping is concerned. That the beekeeping industry of these sections is in its infancy can hardly be doubted by one taking a trip through those sections where alfalfa can be grown successfully. Here is also found a vast territory which at present is in sage brush, but may some day be planted to alfalfa, and will give increased area for bee pasturage. In the vicinity of Ontario and Vale, a large alfalfa district, one can find some of the State's largest and most productive apiaries. Much of the alfalfa is grown



for seed; and with the sweet clover which grows in waste places it gives an ideal pasturage for bees. There are many fine apiary locations in different sections of the State, but all of these should be thoroughly investigated before an attempt is made to start an apiary in any one of them.

Division of State into counties for general farm survey work:

COAST DIVISION.

Curry, Coos, Tillamook, Clatsop, Lincoln.

SOUTHERN OREGON.

Josephine, Jackson, Douglas.

COLUMBIA BASIN.

Hood River, Wasco, Sherman, Gilliam, Morrow, Umatilla.

CENTRAL OREGON.

Malheur, Harney, Crook, Klamath, Lake.

WILLAMETTE VALLEY.

Lane, Linn, Benton, Marion, Polk, Clackamas, Columbia, Multnomah, Yamhill, Washington.

BLUE MOUNTAINS.

Union, Grant, Baker, Wallowa, Wheeler.

EUROPEAN FOUL BROOD

Alexander Treatment Endorsed

BY C. F. BENDER

After seven years' silence I believe that I am entitled to say a few more words as to the treatment of European foul brood, especially as I have rid my bees of the disease completely, not having seen a cell of it for three years. I was among the very first to champion the Alexander treatment (see GLEANINGS, 1903, and later). Indeed, I used that plan before it was ever published, having discovered it accidentally, as Mr. Alexander probably did.

When the disease first appeared among my bees, in 1902, I began treating them by shaking on foundation, on the so-called starvation plan, according to the method then in vogue. The plan was faithfully followed for two seasons; but there were so many cases of recurrence that I had begun to despair. I think the weak point in this treatment was in leaving the old queen with the bees. If a young Italian queen were given at the time of shaking, I think it would always succeed. But if a young queen is given after keeping the bees queenless for a while it is not necessary to shake.

In shaking the sick colonies there was always a lot of brood left over; and the question with me was, what to do with it. It seemed wasteful to burn or bury the combs when so much of the brood was healthy. The way usually followed was to put a lot of this brood together, leaving it for 21 days to hatch out. After hatching was completed the bees were shaken from the combs again, starved three days, then hived on foundation and given a young queen, if they had not raised one that suited me, which was not often, as the disease seemed to attack queen-cells worse than worker brood, and in the worst cases none of the royal cells would hatch.

Toward the end of the summer of 1903 I ran out of foundation and frames, and the combs looked so nice and clean after hatching out that I decided to keep the bees over winter on the combs and shake them in the spring. When spring came I watched these colonies carefully, expecting, of course, that they would be the first to show dead brood; for I had been taught that, to get rid of the disease, we must get rid of the germs. I was surprised to find dead brood in several colonies that had been starved and shaken by the orthodox plan; and equally surprised to find not a cell of it in those that had not been shaken.

I was very reluctant to adopt the dequeening plan for a regular treatment, because I could see no reason why it should cure; and it did fail sometimes. Theory said that the trouble was caused by germs that multiplied in the young larva, and finally killed it; that the disease was spread from cell to cell, and from hive to hive, by means of these germs. The rational treatment, according to that theory, was to destroy those germs. I tried antiseptics of several kinds, but they all failed to cure.

As I had read medicine a little, I borrowed some books and read up on epidemic diseases in general. I learned that, when a patient recovered from such a disease as diphtheria, for instance, he did *not* get rid of the germs first. They were often to be found in his system in large numbers, even for weeks after recovery; but for some reason they did no harm, and the doctors did not know why they were harmless. I learned so much about what the sages did *not* know about germs that I was ready to lay my theory aside for a while.

After that the only thing that troubled me about the dequeening treatment was the occasional failures. While I was still working on the problem Mr. Alexander's articles appeared in GLEANINGS, and the whole matter became clear. As I had complete records of all my colonies for several years back I was able to verify Mr. Alexander's statement that young queens were necessary to success; and if the disease was severe, that Italian blood was much the best.

For a while I practiced dequeening 21 days to allow the brood to hatch out, then shaking on foundation without starving.

That plan also was laid aside, as I became more and more convinced that the Alexander treatment was a complete success. I have no theory to cover the facts. I only know that it succeeds if followed strictly as Mr. Alexander has given it.

There are some cases that may be cured with a shorter period of queenlessness than he has recommended; but until one has had long experience it is not safe to have a laying queen in the hive in less than 21 days after the old one is removed. If the removed queens are introduced in other hives the disease usually follows them, even when the queens are young and vigorous. So it is usually best to destroy the queens when they are removed.

Dr. Miller has given us some modifications of the Alexander plan that I should like to try; but the disease had disappeared among my bees before his experiments were published. I am pretty sure, though, that his cases were much milder than mine. In my worst cases three-fourths of the brood would die in a very short time, and the combs were full of rotten larvæ with a strong sour smell. Such colonies always required a long period of queenlessness. Generally I kept them queenless 18 or 20 days, then gave a virgin or a ripe queen-cell.

Many will doubtless wonder as I did what will be the final outcome of the disease question—whether it will kill off all the bees, or make beekeeping unprofitable. Not at all. When it first appeared in this locality nearly every farmer had a few bees, mostly black. Where no treatment at all was given, most of the bees died; but two neighbors who merely Italianized their bees still have nearly as many colonies as ever. By using the treatment just given I have kept bees for a living through the worst of it, though I could have handled more colonies if they had all been healthy. One good result, among others, was the destruction of nearly all black bees, leaving the field to the Italians.

I have mentioned elsewhere the peculiar way in which the disease spreads. I had always supposed that it was spread mostly by robbing; but experience convinced me that the young bees at play were the most frequent cause of new cases by entering the wrong hive after a flight. My hives are arranged in pairs, two on a stand. When a case appeared, say, in the left-hand hive of a pair, at the front of the apiary, the left-hand hive of other pairs near the first would soon show dead brood. I have seen it several times follow one side of the apiary, entirely across, taking the left-hand hive on each stand, while those on the right hand remained free. I could see no explanation except that the young bees that had been feeding sick larvæ had taken a flight, entered the wrong hive, and carried disease to a healthy colony.

Incidentally I learned something about how bees mark their location where there are many hives together. They seem never to mistake right and left, and never to enter a hive of another color than their own. The most common mistake is for them to enter the hive just behind their own, and on the same side of the stand.

In conclusion I must warn the novice, as Dr. Miller has done, that I have been talking about European foul brood. With the American form, so called, this treatment might prove a failure. If you are in doubt as to which you have, send samples to Washnigton and have them examined.

Newman, Ill.

THE QUEBEC CONVENTION

BY A. O. COMIRE, SEC.

The annual convention of the Quebec Apicultural Society was held in Montreal Nov. 12, at 10 A. M. About a hundred members were present, Dr. Emery Lalonde being in the chair.

The minutes of the previous meeting were read and approved, and the following officers nominated.

Dr. Emery Lalonde, Rigaud.
J. O. Levac, Rigaud.
Jacques Verret, Charlesbourg.
J. A. Vaillancourt, Montreal.
Chrs. Ed. Martin, Louiseville.
J. A. Desforges, Pont-Chateau.
Xavier Morin, Maskinonge.
F. W. Jones, Bedford.
Michel Dufault, St. Roch.
Ludger Rochefort, Becancour.
Prudent Lapointe, St. Henri de Mascouche.
Ulderic Paradis, Cavignac.
A. L. Beaudin, St. Chrysostome.

Mr. Dufault proposed that the Hon. J. E. Caron, Minister of Agriculture, be named Honorary President of the society; Dr. Emery Lalonde President; A. L. Beaudin Vice-president; A. O. Comire Secretary-treasurer for the ensuing year.

The report of the Treasurer showed a balance on hand of $326.

Mr. H. Nagant, representing the Minister of Agriculture, then gave a paper before the convention concerning statistics relative to the production of honey in Quebec. In his letter the Minister complains that our society has not furnished as complete statistics as those furnished by the societies in the counties of L'Islet and Quebec, and that, in consequence, he found himself under

the necessity of retrenching the appropriation now accorded us. The Secretary replied to Mr. Nagant, saying that it was easy for the societies mentioned to furnish complete statistics, for each county had to look out only for itself, while if the society asked for statistics for the whole Province it would be a work that would require the help of all the office employees for a whole season, which could not be compared with the work done by the societies mentioned. The secretary said the Department had not asked him for statistics for this year.

At the afternoon session it was resolved that the Minister of Agriculture be asked to continue the appropriation which he has kindly accorded us in past years, to the amount of $300; also that he be asked to continue the appropriation made last year for the purchase of Italian queens, and to increase the amount to $1000, and that the first service of queens be made immediately to the members of the apicultural society. It was also resolved to request the minister to be so kind as to amend the law so as to extend the powers of inspectors and to render their work more efficacious; also to insist on the use of hives with movable frames to take the place of the fixed type; also to forbid the importation into the Province of bees and supplies infected with disease, and to increase the penalty imposed on those who violate the law regulating the spraying of fruit-trees in bloom.

Mr. Morley Pettit, Provincial Inspector for Ontario, then gave a talk on the organization of beekeepers' societies, and the advantages to be derived therefrom. He gave also a talk on wintering bees. He was followed by Mr. L. M. Grignon, B. S. A., who spoke on bee culture in general, and on the establishing of an apicultural bee journal in this Province.

Mr. Ch. Peloquin, ex-president of the society, gave an interesting talk on rearing queens. His remarks were followed by some from Mr. Beaulne, assistant entomologist at the Ottawa Experiment Station, who spoke on the renewal of queens every two years.

A vote of thanks was extended to the speakers.

On the morning of Nov. 13 the convention was called to order. Mr. J. C. Magnan gave a very interesting account of beekeeping in the county of Portneuf, where he lives, and the means he has used to advance the industry. He was followed by Mr. M. Dufault, who explained his plan of wintering.

To close, Mr. J. F. Prud'homme gave a very interesting talk on the best time to put bees in the cellar, and his plan of requeening each year.

A resolution was passed, inviting women to attend our conventions.

The following premiums were awarded:

WHITE COMB HONEY.

First prize, Dr. L. J. Comire, Yamaska West, $2.50.

Second, Vincent Benoit, Ste. Scholastique, $1.00.

DARK COMB HONEY.

First prize, $2.50; second prize, $1.00.

LIGHT EXTRACTED.

First prize, A. L. Beaudin, St. Chrysostome, $2.00.

Second prize, Dr. L. J. Comire, Yamaska West, $1.00.

DARK EXTRACTED.

First prize, A. L. Beaudin, St. Chrysostome, $2.00.

Second prize, Vincent Benoit, Ste. Scholastique, $1.00.

The convention adjourned to 2 P. M., and when called to order Mr. Harry Jones gave an exhibition of cages used for shipping bees by the pound without frames.

Mr. Beaulne gave an address on wintering bees outdoors as practiced at the Ottawa Experiment farm. He was followed by Mr. J. A. Vaillancourt, of Montreal, who gave an interesting talk on the sale of honey, and the best manner of packing it for shipping to market.

Mr. Arthur Comire, inspector, gave in his own name and those of his assistants a general report of the work of inspection they had done this season.

BEEKEEPING TO BE TAUGHT IN THE MINNESOTA UNIVERSITY

BY P. J. DOLL

The Minnesota Beekeepers' Association succeeded in passing a bill through the State Legislature last winter, which established a Division of Apiculture at the State University. Minnesota has now an appropriation from the Legislature of $5000 a year for the development of the beekeeping industry; $2000 of this is to enforce the foul-brood law; the rest, $3000, is to establish and maintain a Division of Apiculture.

The duties of this Division are to give instruction to the students at the University, to experiment with bees on practical lines, and to aid and develop the bee industry in Minnesota and the Extension Department.

Minnesota is the only State in the Union that has a Division in beekeeping that is not connected with or under some other department. Even the bee department at Wash-

ington is under the Entomological Department. We believe that the bee industry is just as important in the development of our State as dairying, hog, or poultry raising.

Rev. Francis Jager, of St. Bonifacius, Minn., has been appointed by the board of regents of the University of Minnesota to be the chief of the Apicultural Division, and will be called the State Apiarist. Father Jager, as he is called, is a thorough and practical beekeeper. Although he devoted less than half of his time to bees, he has produced, the past season, about 20,000 lbs. of honey from about 110 colonies of bees, and is now wintering 225 colonies. He is a scientist, and a natural-born teacher and experimenter.

At the Minnesota State Fair he extracted, bottled, and labeled 12,000 lbs. of honey. This display created so much interest that the daily papers of Minneapolis and St. Paul had articles on it nearly every day for a week or more. The effect on the public was noticed by the dealers in honey, who sold more honey at better prices than ever before. The beekeepers of Minnesota are fortunate in having so capable a man in this office.

Father Jager announces that he will have a course in beekeeping at the University, commencing January 6, and lasting about thirty days. There will be another course, of ninety days, during April, May, and June. He intends to keep about 100 colonies of bees at the University next summer.

No doubt there will be great developments in the bee industry in Minnesota in the near future. Large yields of honey are reported from all parts of the State, ranging from 100 to 400 lbs. per colony. An entire crop failure has never been known, and there are vast territories of good bee locations with scarcely a bee on them.

CUTTING ALFALFA

Rules for One Locality may not Apply to Another

BY PAUL E. USSHER

In Stray Straws, Nov. 1, I read the short article on alfalfa. In that article the question is asked, "Has it been proven beyond doubt that there is any advantage in cutting alfalfa before it comes into bloom?" As a Westerner I feel qualified to write on the conditions existing in sunny California and Arizona. In the great Imperial Valley in California, and in the Nile-like valley of the Colorado in Arizona, we find conditions well nigh perfect for the growth of that greatest of all plants, alfalfa.

Alfalfa is the great western food for horses, cattle, and the ostrich. I mention the ostrich for the reason that there are thousands of these giant birds reared in Southern Arizona. It has been proven beyond doubt that hay for dairy purposes should be cut when the plant is about one-tenth in bloom, and for horses and mules the plant should be allowed to attain practically full bloom. The reason is a scientific one. Horses and mules require a strong, nourishing hay which is found in alfalfa which has been cut while in full bloom; while cows, especially dairy cows, require a hay that is rich in milk-forming qualities which is found in alfalfa cut while tender, and, as I said, when about in one-tenth bloom. The ostrich is permitted to graze, and eats with avidity the tender growths of the plant.

I hardly think that cutting before bloom would have a detrimental effect on the vitality of the plant or materially shorten its life. Alfalfa is known to live for a hundred years, and under adverse conditions at that. Of course, cutting before bloom would give probably one extra crop, but such crops are not so heavy as fully matured alfalfa would yield.

In the Imperial Valley and in the Yuma Valley of Arizona no commercial or barnyard fertilizer is used upon the fields, for the very good reason that nature has provided the best possible fertilizer. The Colorado River, which furnishes all the water used for irrigation purposes in these parts, carries in suspension a large percentage of the most valuable fertilizers. In this respect our soil conditions are very similar to those of the Nile.

Bees gather great stores of honey from the bloom of the alfalfa in these sections. It commences to blossom in April, and continues well up into October. Many fields are allowed to blossom for seed. Such fields yield abundantly for several weeks a fine nectar. I have never seen nicer honey than that furnished by alfalfa. The flavor and body are present, and in color it equals most grades of choice honey.

On the desert plains and valleys all shoots of this plant grow to an equal height, so that, in cutting, all shoots are severed a short distance from the ground. All seem to start at once after cutting, and no short shoots are injured in cutting, as appears to be the trouble in the alfalfa grown in the East or middle West. This year I saw the first crop being mowed the 20th of March, and the last will be cut about the first of December. Cuttings may be had every five weeks provided water is judiciously applied.

I would not attempt to advocate for the

East the principles we adhere to in this sun-kissed land. Here we have less than three inches of rain per annum, very few cloudy days, and practically no night dews. A long hot summer is our lot, followed by a delightful winter season, if it can be called winter. I sometimes long for snow and rain, and, to use a slang expression, "can you beat that?"

Yuma, Ariz.

CUTTING ALFALFA

June Grass and the Alfalfa Weevil; Advice from Experiment Stations

BY JOSEPH H. PETERSON

As I have almost grown up in an alfalfa-field I will try to give you a little light on the question. Dr. Miller says that in his locality the young shoots that are to make the second cutting will be spoiled if the first cutting is delayed until full bloom. That is not true here. The second growth does not start until the first is cut unless it is left standing too long and given an extra amount of water. The second crop will not start here, as a rule, until it has had an irrigation, although this is often given just previous to cutting the first crop.

Farmers in this locality usually let their alfalfa come well into bloom before cutting, or would do so if there were nothing to interfere. The second cutting, which begins blooming the latter part of July, is nearly all left to bloom out fully; but the first cutting of late years is nearly all done in bud or with very little bloom. This, however, is not because it is considered the best time to cut, but to get the June grass, with which the first cutting is infested, before it ripens. This June grass, if cut early, makes fairly good hay; but it matures earlier than alfalfa, and in the mature state it is not eaten by stock, and is even injurious to horses. On account of this, and also on account of our new acquisition, the alfalfa weevil, the first cutting of alfalfa is nearly all done early.

We get three cuttings here, and the third cutting often blooms profusely before it is cut, and some years the bees get considerable late picking from it. The second cutting is our honey crop, especially where it is left to seed, as considerable of it often is.

The Utah Experiment Station has made some very thorough experiments in the past on the proper time to cut alfalfa (it is commonly termed lucern in this locality), and I quote a few conclusions:

"The digestibility of lucern remains practically constant from budding time to the period of full bloom."

"We may hold this conclusion to be right—that, to insure a large yield of dry matter and the largest amount of albuminoids, lucern should be cut not earlier than the period of medium bloom, and not much later than the period of first full flower. This, in most cases, will be two or three weeks after the flower-buds begin to appear. It will be a more serious error to cut too early than to cut too late."

The above is from Bulletin No. 58, Utah Experiment Station, "The Chemical Life History of Lucern," Part II., by John A. Wedtsoe.

Ogden, Utah.

CUTTING ALFALFA

Continuous Cutting of Immature Plants is Devitalizing

BY E. E. STARKEY

Dr. Miller, in Stray Straws, page 749, Nov. 1, says, "Wait till it is all in bloom before your first cutting, and the young shoots from the bottom (which shoots make your second cutting) will have grown so high that they will be spoiled at first cutting, or else you must set your sickle-bar so high that you will not get all of the first crop."

I live near midway of the Yakima River Valley where thousands of acres of alfalfa is grown, and much of this has been growing as long as fifteen or more years continuously on the same ground, and I venture to say that not one ton of lime has ever been spread in this part of the country; and, in fact, but little or nothing is done to aid the growth except to surface cultivate in the spring time and irrigate. Three cuttings per year are the general practice; sometimes four and even five cuttings are taken by those who keep cows, and *think* it pays to cut it while quite tender. Even if the cow does like it better while young, that fact does not prove that land cut over in this manner produces as great profit as where the good well-matured cuttings are taken, and the three cuttings can be each allowed to bloom from one week to ten days or even more (at this stage it is not "all in bloom"). Alfalfa, when left uncut, is a continuous bloomer for the greater part of a long summer.

My own experience during the past five years is that the shoots from the crown come at various stages when the water is supplied at irregular intervals, and I have concluded that the best method of securing heavy and best paying crops is to allow it to bloom until the field looks quite blue, say from ten

to fifteen days from the first blooms, applying water at the beginning of bloom, and not again until after cutting; then young growth is just getting started by the time the field is cleared and water again applied.

I am persuaded that continuous cutting while immature is devitalizing to the plant, and that where continuous cropping is desired, renewed strength is furnished when the plants are allowed to come to full growth, but not to the production of seed, as seed development greatly reduces the strength of the plant.

I am confident that, as time proves what is best, we shall find pretty well-grown crops and but little tender-plant cutting.

Prosser, Wash.

CUTTING ALFALFA

The Time for Doing this Depends on the Stock to which it is Fed

BY V. R. NICODEMUS

To my mind, alfalfa is the most alluring plant now under cultivation. Its high feeding value, both in digestible nutrients and in palatability, makes it a prize worth the best efforts of every good farmer. Fortunate indeed is that eastern farmer who has secured a good stand of plants on several acres. More fortunate still is he if he succeeds in cutting his crops at the proper time and getting them cured properly.

One important factor in determining the proper time for cutting is the animal to which one expects to feed it. For cows or horses, alfalfa may be left standing until in full bloom—better only three-fourths bloom —before cutting, and good results be obtained. But for hogs it is highly important that it be cut early. By so doing we lose a little, perhaps, in yield, and in the total digestible nutrients, but we gain immensely in palatability. If alfalfa is left standing too long its stem becomes woody and unpalatable. I remember that the spring of 1912 here was very wet, so that we were unable to cut the first crop of alfalfa until it had all bloomed full and broken down. When feeding this to our cows we found considerable waste.

Then there is another consideration. Early-cut alfalfa does not drop its leaves as readily as late cuttings. When one considers that about three-fourths of the digestible nutrients are in the leaves of the alfalfa plant, we readily see the advantage of early cutting.

Henrietta, Pa.

SOME COMMENTS ON RECENT STATEMENTS

Is the Wall of the Hive Porous?

BY R. F. HOLTERMANN

On page 822, Nov. 15, the question whether hive walls are porous is brought forward by Mr. A. S. Tarson. Let me say that I do not want an unpainted hive or super; but water or moisture does go through the sides of the hives. I *know* this because I have seen it after it came through. Now, do not be in too great a hurry to say that I am mistaken, or that I can not prove that statement, for I can.

I have wintered bees in cellars in years gone by; and when taking them out in the spring I saw on the sides of the hive patches of paint having the appearance of a blister. Upon breaking through this paint I found water underneath. Where did the water come from? It could not have come from the outside, or the paint could not have confined the water under it. It *must* have come from the inside of the hive, driven, in the form of vapor, by the heat of the bees into the wood where it condensed under the paint. The late S. T. Pettit had the same experience. I have seen cases of this kind when the bees were in his bee-cellar, and I have heard him speak of it.

It is not at all necessary that moisture leave the hive in such a way. If proper provision is made, there are better ways to take care of the excess of moisture.

This much I am prepared to admit: The more the bees propolize the inside of the hive, the less tendency for moisture to go through the side of the hive.

THE SMOKE METHOD OF INTRODUCING QUEENS

The discussions along the above line have interested me; but when a man like Mr. J. E. Marchant makes the statement, "You can run a queen into a colony that already has a queen by smoke, and the bees will kill the old queen and accept the newly smoked-in queen," I just wonder if he should not say, "may accept the newly smoked-in queen." If he is correct, the plan will be of great value to us.

Over thirty years ago a student of the late Henry Alley taught me how to introduce virgin and other queens by means of tobacco smoke. Up to the present time I know of no better way of introducing queens providing the colony has no surplus honey in the hive, and if it is not during robbing time.

In the first case it is a difficult matter to get all the bees under the influence of the tobacco smoke, and the smoke taints the honey. In the latter case I have found by experience that something, probably the

tobacco smell, seems to draw the bees to a colony which has been dealt with in the way necessary to introduce the queen, and the colony naturally falls an easy prey to robbers. This may not be the case with ordinary smoke; but even if it is, it would not be a serious obstacle if a new queen could be made to replace the old in this way.

THOSE LARGE SMOKERS.

Dr. C. C. Miller, in his kindly way, rather takes me to task for wanting a large smoker. "I'd rather waste time to load up two or three more times in a day than to waste a good deal more in way of strength by lugging around too heavy a smoker." It is bad to waste any thing. For instance, many people eat more than they require. That is waste of food; and right here let me offer a suggestion in connection with the problem of how to reduce the cost of living. It can safely be whispered to 95 out of 100 people that they should eat about half what they do, and this will cut their food bill in two, and this largely reduced demand will likely materially reduce the cost, perhaps cutting it another 50 per cent. Doctors' bills, too, will be smaller. The doctor who tells a patient that he overeats loses his practice; hence, to work it off one must take exercise. How shall we exercise? It would not do to work if we can help it; that is an economy adapted to poor people, so we (or, rather, they) take long walks; or if that is too much trouble they attach themselves to a club with a gymnasium.

Why not let this energy be expended in carrying about a smoker that weighs six or eight ounces, or even a pound, more? Dr. Miller, we judge by contrast. I have seen enough of all phases of life, and you have too, to know that this is correct. If I spend my time in a nice office, comfortably heated, I do not appreciate very highly a heated home. But send me out during a November day with a team and lumber wagon, and a load, and let there be a cold rain, and I will gladly, when the day's work is done, find refuge in a log shanty with a fire in a smoky stove and a candle sticking in an empty bottle. So, doctor, when you have an eight-frame hive you rejoice when the honey crop is light, and muscle and exertion are not wasted in lifting a larger crop. Or if the bees will swarm and put the rest of the honey crop into another hive, that pleases you. You would say, "Well, well! This saves muscular exertion: I'd rather load up two or three more times," etc. One soon becomes accustomed to the heavier smoker, and, within reasonable bounds, thinks no more of operating a smoker weighing 2 lbs. or even 2½ lbs. than one weighing half a pound less.

Time counts during the busy season of the year. After handling twelve-frame hives, an eight-frame seems like a toy; but it is a source of pleasure to get a heavy crop, even if we have to lift it and handle, and it is a source of satisfaction to have an implement to smoke the bees with when a gain is made in the day's work. Now, I would suggest that those who would like a larger smoker than the one now on the market "shower" GLEANINGS with post cards. I feel sure that many beekeepers do want larger smokers; and even if they do not it would not change my view.

Brantford, Canada.

BEES ENTERING COMB-HONEY SUPERS

No Trouble During a Honey-flow

BY FRANK M'MURRAY

Mr. J. E. Hand, Nov. 15, page 805, has an interesting article on section-honey production, which is based upon the assumption that bees have a natural dislike for work in section-honey supers.

Acting upon the generally accepted theory that bees dislike a section-honey super on account of its subdivided and crowded condition, I have experimented in various ways to overcome this supposed dislike. I have tried four-beeway sections in connection with various forms and sizes of perforations in separators, only to find that in many cases my work was undone by the bees closing the openings with wax or propolis, many of which were much more than beeway size.

My latest experiment was with slatted separators, and the openings in these I found entirely filled with wax and propolis in most supers.

These experiences, taken in connection with the well-known fact that bees do not hesitate to fill the small space between top-bars and cover with comb and honey, if no other room is provided, have forced the conviction upon me that the dislike of bees for a section super (if any) must be accounted for in some other way than its crowded and subdivided condition.

I am a section-honey producer, and I can charge none of my failures to dislike of the bees for work in section supers; but they are all chargeable, first, to a shortage of nectar; second, to excessive swarming.

When nectar is plentiful, I find that ninety per cent or more of colonies enter the section supers gladly; and the remaining ten per cent or less I either requeen or "bait" with an unfinished super. I use half-sheets of foundation at the top of

sections, and the short Dr. Miller starter at the bottom, with from one to four "bait" sections in the first supers put on in the spring.

The first consideration in honey production is nectar. Let beekeepers look well to their local honey environment. Let them cause two honey-producing flowers to bloom where there was only one before, by seeding waste lands with honey-producing plants. Let them co-operate to see that no bee-range is overcrowded, and all other difficulties will become small—very small.

I do not doubt the practical success of Mr. Hand's proposed method; but I do believe it involves loss of time and energy, both for the bees and their keeper.

Aurora, Mo.

THE FOOD VALUE OF SUGAR AND HONEY COMPARED

BY E. P. ROBINSON

On pages 629 and 633, Sept. 15, are comparisons of honey with sugar, beefsteak, fruits, and vegetables, all favoring honey. It is an old saying that "comparisons are odious," and surely in these cases they could be fairer. It reminds me of the claims of the rice-growers' association as to their product—a poorly balanced one.

There is little doubt the American people eat far too much sugar—probably about five dollars' worth a year per capita. If four dollars of this were expended for honey the health of the people would be better, not wholly because of honey being more wholesome, but because so much less sweetening could be bought with the money, the honey costing about three times as much per pound as sugar.

The only just way of comparing food materials is by their analyses. The following figures are interesting as showing the nutritive values of some of the least as well as most nutritive food stuffs:

The food value is obtained by multiplying percentage of protein and carbohydrates by 1860, and fat percentage by 4220. The average American diet has been determined by our nutrition experts as about 17 per cent protein, 25 per cent fat, and 58 per cent carbohydrates. More protein is needed by the growing child and man at hard labor; while less is needed by the aged or idle.

The figures show honey as one of the luxuries, along with cheese and butter, rather than as a staple everyday food of the masses like potatoes, bread, crackers, sugar, and rolled oats. Maple sugar and syrup are in the same class with honey; analyses similar, and costs not far apart.

That any of our fruits or vegetables average 95 per cent water, as stated by the *Farm Journal*, I can not believe—even watermelon being only 92.4 per cent.

Mr. Terry's statement that honey is more wholesome for sweetening oatmeal than sugar is true; but what oats need is more fat, not more carbohydrates, the principal element of both sugar and honey. Either of these added to oats further unbalances it as a ration, while cream or butter balances.

Packer, Ct.

[The consumption of sugar per capita is much greater in this country than in Europe, for instance—probably because we make so much of it—and a great reaction is bound to come. Already public sentiment is deploring the abnormal use of sugar. Sugar is more convenient as a means for sweetening than honey—at least most people consider it so, and then it is somewhat cheaper.

Beekeepers and honey salesmen should take the greatest pains to point out that honey is *not* a cane sugar, like maple syrup, etc. It is a fact that a great many doctors do not know this.—ED.]

	Cost	Water per cent	Protein per cent	Fat per cent	Carbo Hydrate per cent	Ash per cent	Value	Value per cent
Oysters	.18	88.3	6.0	1.3	3.3	1.1	230	13
Eggs	.18	65.5	11.9	9.3	0.0	0.9	635	35
Beef, lean	.20	62.5	19.2	9.2	0.0	1.0	745	37
Milk	.04	87.0	3.3	4.0	5.0	0.7	325	81
Cheese	.20	34.2	25.9	33.7	2.4	3.8	1950	97
Honey	.15	18.2	0.4	0.0	81.2	0.2	1518	101
Butter	.34	11.0	1.0	85.0	0.0	3.0	3605	106
Butterine	.17	9.5	1.2	83.0	0.0	6.3	3525	207
Raisins	.07	14.6	2.6	3.3	76.1	3.4	1605	229
Potatoes	.01½	78.3	2.0	1.0	16.5	0.9	345	230
Bread	.05	35.6	9.3	1.2	52.7	1.2	1205	241
Crackers	.07	5.9	9.8	9.1	73.1	2.1	1925	275
Lard	.12	0.0	0.0	100.0	0.0	0.0	4220	352
Sugar, granulated	.05	0.0	0.0	0.0	100.0	0.0	1860	372
Rolled oats	.03	7.7	16.7	7.3	66.2	2.1	1850	617

Heads of Grain from Different Fields

Insectology

Of work the bee is not afraid,
And hard times can't expel it;
For when it gets its honey made
It knows just where to cell it.
—*Cincinnati Enquirer.*

Then take the case of Mister Fly,
Pursued with noise and clatter;
When he observes one's hand on high,
He knows just swat's the matter.
—*Denver Republican.*

Consider, too, the little gnat;
He's fortunate in that he,
Whate'er the styles are—thin or fat—
Can manage to look gnatty.
—*Chicago Inter-Ocean.*

And also there's the tiny flea,
So thrifty and well fed;
You grab him where he seems to be,
And find the flea has fled.
—*Peoria Journal.*

And there's the little redbug, he
Is always well and hearty;
He has no stinger like the bee,
But he's ten times as smarty.
—*Houston Post.*

Is it Practicable to Ship Bees in a Refrigerator Car?

I write to ask what data you can give about shipping bees in a refrigerator car with ice. I have been shipping for years, but do not find shipments made in cattle-cars to be altogether successful. How did you make your shipments last year from Florida? The question in my mind is, whether ice will keep down the temperature sufficiently when the circulation of air must of necessity be poor. That the darkness of the freezer would tend to keep bees quiet so that they will not generate so much heat, I can readily see. But that the ice can absorb the rest of the heat fast enough I can't see so plainly.

Your scheme of shipping to Florida is all right. I am going to do the same thing, except that my chosen land is southern California. If there is sufficient rain to start early pollen I expect to get quite a crop of orange honey. Crop or no crop, I am sure of making 100 per cent increase, and most likely more.

There is some difficulty in getting queens mated on account of high fogs in California; but ordinarily one can make three nuclei out of each hive. I aim to have three or four frames of brood and plenty of bees in a ten-frame hive containing seven combs in all, the other space left for clustering-room. Then comes the question of shipping.

Now, if those nuclei could be brought through intact by May 20 they would do finely; but so many bees die in each one, and so much brood is lost, that it requires a month's time for them to build up. Please understand they are given water too, either *en route* or before starting. But the light in a cattle-car keeps them so excited that they soon evaporate all the water given in their combs, and eat brood besides.

Now, I want to try a freezer to avoid the loss of larvæ and old bees. If icing will actually do it, the knowledge will save many a dollar to several of us Western shippers.

Hansen, Idaho, Nov. 17. G. C. MATTHEWS.

[We question very much the wisdom of using a refrigerator car to keep down the temperature of the bees. We have had no difficulty in several carload shipments of bees, and we have never used any ice to cool them down. The important thing is, plenty of water along the route. A man must go with the bees, of course, and he must water them whenever they get to roaring. A little practical experience, however, will determine when the bees need water; but it must be given much more often during hot weather than one would ordinarily suppose—sometimes every hour or so.

It is not quite clear to us from what you say whether you supply the bees with water at the start in the combs themselves, or whether you send a man along to give them water every now and then. We should infer, however, from the fact that you lose so much brood that the bees have only water at the start, and that in the combs. This is not sufficient, because bees will use up an immense quantity of water.

Two years ago this coming spring a carload of bees from Florida *en route* about eight days would take up a barrel and a half to two barrels of water. We have found in both cases, where we have supplied water plentifully, that not a particle of the brood was destroyed; that even queen-cells hatched out, and apparently queen-rearing would go on just about the same as it would ordinarily. Even uncapped queen-cells were capped over and hatched out *en route.*

You are referred to our article in this issue on shipping bees in car lots. We use during the colder weather, when we are shipping bees from the North to the South, a fruit-car. This has doors at each end, and, of course, doors at the side as usual. During the hot weather we use cattle-cars. The main thing is to keep the bees supplied with water and the car moving. When a car stands on a siding, and the sun shines on the side of it, the bees get very noisy. It is then necessary to put up a canvas on the side next to the sun, and at the same the bees must be very liberally watered. A good wetting down very frequently keeps them quiet; but it is very important to get in touch with all the railroad officials along the line, to the end that the car may be moved promptly, and on fast freight trains, so that there may be no delay between one freight train and the other. As far as possible, secure a through freight. There is not a particle of need of losing any brood, and that, too, without the use of ice.—ED.]

Making Increase in September

The first of September I had five colonies of bees that were crowded in the brood-chamber until they were clustered on the outside of the hives. The honey-flow in this section was over, so I decided to try a new experiment. I opened each of these five hives; and when I had found the frame that the queen was on I placed this frame, queen, bees, and brood in a new hive with full sheets of foundation, and then I moved the old hive to a new place and put the new hive with one frame of bees and brood, and the old queen where the old hive had been. The old workers, of course, all went into the new hive where the queen was. These new colonies I fed freely on sugar syrup, and by the last of September they were well filled up with winter stores, had a fair supply of brood, and at this date, Nov. 12, there is still unhatched brood in them.

The five old hives that I made these five new ones from were queenless the fourth day after removing where the queen was. These new colonies I fed freely cells, and gave them eggs from my choice queens. Each of them raised nice queens; but one of the young queens was lost in her mating-flight. I then united this colony that was queenless with the one that I had taken from it. They united without any quarreling whatever; and by this uniting I had some

extra frames to help finish up some weak colonies with winter stores.

The first of November, when examining my bees and putting them in winter cases on opening the hive where the most prolific queen I had was (she being one year old, and the only hybrid in my yard) I found the bees had begun to ball the queen. I blew some smoke on them, and scattered all, but two bees refused to let her loose; and before I could get them away from her one of the bees had stung her. I then put the cover on the hive and placed the queen on the light board in front of the hive. Just as soon as I put her down the bees attacked her with increased fury; but by the use of the smoker I helped her to get into the hive. Then in about thirty minutes I opened the hive and found the queen well balled on the bottom of the hive, and almost dead. I then finished killing her and left them queenless until the next day; then I united them with another colony, which was done with but little smoke and no fighting.

In both cases of uniting above referred to I put the bees in a different hive from which either colony this larger space?

Dott, W. Va., Nov. 12. H. INGRAM COOK.

[As a rule it does not pay to attempt to make increase in your locality as late as Sept. 1. Much depends upon the weather and on the honey-flow; but usually it is safer to let the colonies remain strong. One rousing good colony stands a better chance of wintering safely than two colonies only medium in strength. Furthermore, unless a special effort has been made to keep plenty of vigorous drones in one or more colonies the young queens are likely to remain unmated.—ED.]

Making Honey Vinegar

I have decided to make vinegar out of the sour honey. I looked up the recipe in the A B C of Bee Culture, but there are a few things that I don't quite understand in regard to it.

1. About how long does it usually take to make good vinegar?

2. Could it be made now and left in the cellar this winter, or would it be better to wait until next summer and make it outside when it is warm?

3. If made now, would it be harmful to bees that are being wintered in the same cellar with it, and would it affect sealed jars of fruit?

4. Will good syrup-barrels be good enough to put it in? Should the whole head of the barrel be taken out, or will it do just as well to leave the bung open and cover with fine wire cloth or cheese-cloth?

Hopkinton, Iowa, Oct. 27. A. R. SHEARER.

[The above was referred to Mr. E. M. Nichols, of Lyonsville, Mass., who replies as follows:]

It will take from two to four years to make good honey vinegar if one fills a barrel or cask with honey properly reduced with water, and allows it to go through the natural change to acetic acid, or vinegar.

If you have a quantity of honey you wish to make into vinegar, a better way for you to do is to place a cask, capacity 45 to 50 gallons, in a warm room, temperature 40 to 50 degrees Fahrenheit; lay the cask on its side with the bunghole up and covered with cheese-cloth. If the barrel stands on one end with one head out, there would be a larger percentage of loss by evaporation. The cask should be filled about half full of good vinegar, then add ten quarts of fermented liquid once in about seven days. When the cask is full, draw out about half of the contents and continue the process. In preparing the sweet liquid I prefer rain water to put with the honey, and have the liquid about as sweet as for a sweet drink; or one can determine this by either method mentioned on page 592 in the A B C and X Y Z of Bee Culture. When this liquid is first prepared it contains a per cent of sugar; when it is allowed to ferment, it then contains alcohol, and the alcohol is converted to acetic acid by the cask process. This same method of making vinegar can be used on a smaller scale if one wishes.

There will be no harm in storing honey vinegar in the same cellar with bees or sealed cans of fruit.

Color of Drones from Mismated Bees

On page 548 Mr. Albert Swanton asks if queens mated by black or German drones don't produce black bees and drones. Your answer is that a queen mated with a black drone will give both bees and drones, mixed blood. Now, I suppose you and Mr. Swanton mean a pure Italian queen will. I have always understood that the mating has nothing to do with the drone offspring; that is, if the queens were pure Italians. All her drone brood would be pure Italian, no matter what kind of drone she was mated with. If I am not correct, put me straight.

DEEP SPACE UNDER FRAMES UNDESIRABLE.

Again, page 517, your correspondent advises a space of one inch or more between the floor and bottom-bar. My experience has been that, if over ½ inch is allowed, bees will build combs, and give a lot of trouble. Again, what is to be gained by giving this larger space.

Hempstead, Tex., Aug. 12. G. T. RAWLS.

[Our answer, page 548, was, perhaps, not complete. The orthodox teaching is that the drones from a pure Italian queen, even if she be mated to a black or hybrid drone, will be pure also. A few, however, take exception to the statement; but unless we can get better proof to the contrary we shall have to accept it as true.

This question of a deep bee-space under the frames hinges somewhat on the locality and the strength of the honey-flow. We use an inch space under our frames—that is, between the bottoms of the bottom-bars and the floor of the bottom-board; and it is rare indeed that bees build comb in the space, and we have had some pretty strong honey-flows also. The great advantage of this extra space is the providing of better ventilation; and better ventilation means less swarming. Of course, one can have a deeper entrance with a ⅜ space under the frames; but the ventilation will not be nearly as good by considerable. The tendency of the beekeeping world now is toward a larger space between the bottom-bars and bottom-board, and larger entrances, and mainly because of the reduction in the swarming; and while it does not stop it, it discourages it.—ED.]

Raising Queens in Upper Stories

I have been reading again some of last year's copies of GLEANINGS, and came across an article by G. J. Yoder on making up winter losses, May 1, 1912, page 281. Could you shed a little further light on the subject? I have raised a few queens in this way, but have to remove them just before they hatch, otherwise they simply disappear. On only one occasion was I really successful in getting a queen mated from an upper story, and in this case an excluder was placed on the first story, and a wire screen on the second. The queen mated from the third story, and is now doing well. It seems that an excluder on the first story is not sufficient, even when the queen is raised in the third. Does this raising of queens in supers lead to swarming, especially if done in the swarming season?

FRED E. WHITE.

North Vancouver, B. C., Sept. 19.

[One can raise cells in the upper story of a strong colony very easily; but there are some important requirements, even to do this. The upper story must be separated from the lower one by means of an excluder. There must be a light honey-flow, or a feeder on the hives, for the bees must be kept in a high state of prosperity. Moreover, bees will not

start cells, as a rule, in these upper stories; but they will finish and cap over those that have been already started.

Queens can be mated from an upper story with perforated zinc between the two parts of the hive; but ninety-nine times out of a hundred the plan will fail. The only way to make it work at all is to use a wire screen between the upper and lower stories, and then use a separate entrance to the upper story, preferably in the rear.

Yes, rearing cells in the upper story has a tendency to incite swarming. The presence of a large number of cells ready to hatch within a few days will start up a swarm as nothing else will do except an overcrowded condition of the hive and lack of ventilation.—ED.]

Do Bees Steal Eggs?

This question has been discussed pro and con for years; but it is not my intention here to undertake to settle it nor even to express an opinion. My whole object in writing this is merely to record an interesting case that came to my attention.

On May 15, 1913, in company with Thos. Parker, of Bedford, Iowa, I drove to the home of J. H. Fitch, who has a fine apiary in Danzenbaker hives near Bedford. Among the hives examined was one containing a drone-layer. The hive was full of drone brood and drones, with but comparatively few workers. Not a trace of worker brood could be found within the hive. On one of the frames Mr. Parker found a sealed queen-cell, and on the opposite side a partially built queen-cell. We were very much interested to know whether this cell contained a drone larva, such as often happens in such colonies. We decided that in case the cell really contained a female larva there was no way to account for it unless the bees had secured a fertile egg from some other colony.

On June 26, a little more than a month later, Mr. Fitch wrote me that the cell had, in fact, contained a queen, and that there was at that time sealed brood in three frames. He said that the queen was a very fine-looking one, and the colony gave promise of prosperity.

This is the most striking instance of this kind that ever came to my attention, for the old queen was very plainly a drone-layer. I have heard of similar cases, but this is the most puzzling one coming under my own observation.

Atlantic, Iowa. FRANK C. PELLETT.

Does the Caging of a Queen in Her Own Hive Cause the Building of Queen-cells?

If an old or laying queen be caged and placed in her own hive, will the bees build queen-cells the same as though she (the queen) were taken out altogether? And may that queen be liberated again in her hive at any time? or must one of the plans for introducing be followed out? Must all queen-cells be removed before she is liberated or introduced?

If the queen be caged, and placed in another hive, will she be fed by those bees the same as she would be were she caged and placed in her own hive?

Berne, Ind., Nov. 20. MOODY BRENNEMAN.

[One can cage a queen in her own hive, and the bees will feed her, and at the same time build cells; but a strange queen caged over another colony that already has a queen, probably will not be fed. A dozen or so queens may be caged over a colony that is queenless, and the bees will feed some and not others; that is to say, they will select out one or more queens which they seem to accept, and to smear the wire cloth of the other queens over with bee-glue, thus smothering them to death.

A queen may be kept caged in her own hive if kept queenless for a month or more; but it might be advisable in any case to have a little candy. In the case of a strange colony it is very important to have candy, especially if that strange colony already has a queen at large in the hive. If there is, therefore, but the one queen in the hive, and she has been caged for some time, she may be liberated any time providing no virgin has hatched from one of the cells. If there are capped cells, as a matter of precaution they should be cut out before the queen is released, or the bees might kill the queen, knowing that young virgins would soon be due. Bees will very often seem to prefer a prospective virgin to a laying queen. —ED.]

Parcel Post in Germany

In Germany the charge for a package up to 11.1 lbs. is the same, be it one pound or eleven. The minimum charge to a distance not over 10 miles is 6 cts.; for any greater distance anywhere within the empire the charge is 12 cts.

The post accepts parcels up to 111 lbs. For each kilogram over five kilograms the following charge is made:

Within the first zone, not over 10 miles, for each additional kilogram, 1¼ cts.

Within the second zone, not over 20 miles, for each additional kilogram, 2½ cts.

Within the third zone, not over 50 miles, for each additional kilogram, 5 cts.

Within the fourth zone, not over 100 miles, for each additional kilogram, 7½ cts.

Within the fifth zone, not over 150 miles, for each additional kilogram, 10 cts.

Within the sixth zone, over 150 miles to anywhere within the empire, for each additional kilogram, 12½ cts.

Packages of very large dimensions, baskets with plants, cages with animals, etc., there is an addition of 50 per cent to the regular charge. Five kilograms is called a *post parcel*. This term is commonly used in advertising honey. The price for the post parcel containing 4½ kilograms honey includes the carriage and C. O. D. charge usually. The C. O. D. arrangement is a great convenience. The postoffice makes for the C. O. D. an extra charge of only 2½ cts. over the amount the money order would cost. The party receiving the package pays the cash, but has no address to write, while the sender knows he will get the amount of his bill without delay. Goods and honey are usually sent C. O. D.

The package for honey used is a tin pail with a cover that fits water-tight. As a rule the honey sent by parcel post is crystallized. Although the pail will hold the liquid honey, yet the hauling is *not* gentle. For a greater distance the only safe way is to wait until the honey has crystallized. The pails are filled with liquid honey, and set aside for crystallization. No wrapping is necessary.

J. A. HEBERLE, B. S.

Markt Oberdorf, Bavaria, Germany, Nov. 8.

Not One Failure when Introducing by the Smoke Plan

I have just read the Nov. 15th issue, and say amen to J. E. Marchant's article, page 804. I really believe this smoke plan to be the best thing ever given to beekeepers for the introduction of laying queens and virgins. When friend Miller's article first appeared in GLEANINGS it made me "sit up and take notice," and the next day I introduced a laying queen to a strong colony after first removing the queen they had; and bad weather came on so that I was unable to look into the hive for a few days; and when I did I found the queen all right, and she was laying in good shape. The plan pleased me so much I wanted to go further, and so I introduced a queen to a colony which I found queenless and having queen-cells well under way. This was also a success. I then tried virgins, giving them to two and three frame nuclei.

I want to say right here I think any one is apt to fall down unless he is careful in the way the queen is run in. Referring to the danger mentioned in an editorial in the September 1st issue, when introducing to small nuclei, of having the queen run away into some corner or away from the combs, I will say that I always remove the entrance blocks at the side near the combs and let the queen run in at the corner, then replace the block, and upon examination I have never failed to find the queen upon the combs and at home. I have never had one balled yet.

I have not had a chance to try this method on laying workers, but will in the near future if the opportunity presents itself. Some of our old beekeepers are shy about trying this method, and seem afraid of losing queens by it; but we have got to try things out if we ever expect to get anywhere in this world. I have introduced queens for other beekeepers by this method with the best of success, and I am firmly convinced that it is the quickest and best method given yet, and also the safest if properly done. It certainly means a big saving of time and money to all who try it, queen-breeders especially.

Berlin, Ct., Nov. 21. A. E. CRANDALL.

Queens Introduced by the Smoke Method are Laying the next Day

Regarding the smoke method of introducing queens, I will just state that I have been using that method for the last twelve years, with the result that I have generally succeeded in introducing successfully about 100 per cent of my queens. About ten years ago I wrote an article for the *Western Bee Journal* detailing said method of introducing, at which time I did not know who was using that method. Previous to this I had always observed the directions for introducing, and, as a result, I lost about one-fourth of my queens.

One thing I wish to say about the smoke method is, it must be used with caution. An overdose is cruel, and, if given during a honey-dearth, you will find plenty to do protecting the hive from robbers.

Another advantage which is important is, the queens are laying the next day.

Bakersfield, Cal., Nov. 8. F. D. LOWE.

Sending Honey by Freight C. O. D.; Plain Simple Business Directions to Those who are Shipping to Strangers

I sell most of my honey by correspondence, or, in other words, I do a mail-order business. When shipping to strangers I ship to shipper's order, bill of lading attached. I have had one or two shipments refused because the railroad agent refused to let parties inspect honey before signing a draft. Others (from letters received) think it shows disrespect to them to ship in that way. How do you manage this? I can't afford to ship to strangers with straight bill of lading, as I have had trouble collecting that way.

Llano, Tex., Oct. 2. L. B. SMITH.

[In sending freight of any kind, draft attached to bill of lading, if you desire the consignee to inspect the bill of goods you must make that proviso in the bill of lading, otherwise the railroad agent has the right to refuse the consignee such privilege.

In sending stuff C. O. D., either by express or freight, one has to run the risk of offending a possible future customer who will pay cash. If his bank standing or credit is good he is more apt to take such offense. It is usually advisable to go to your bank and ask if it knows the financial standing of the parties to whom you propose shipping your goods. If they can find no rating in Dun or Bradstreet whatever, or if the rating is unsatisfactory, you will be compelled, if you ship at all, to send goods draft attached to bill of lading.

In all transactions of this kind it is usually best to ask the prospective customer, in the first place, if unknown to you, to furnish references. This is an ordinary plain business requirement; and if business men, and in particular beekeepers, would take this precaution they would avoid a lot of bad debts and, very often, bad feelings of a sort that means no future business. Any man who is offended because you require references should be avoided, for no responsible person objects to it; and it is not always wise to presuppose that parties referred to would give the proposed consignee a satisfactory rating; so it is best to write one or more of the references. It may consume a week's time, but it may save the price of a crop of honey.—ED.]

Melting up Extracting-combs Taken from Foul-broody Bees

I wish to know whether it is advisable to melt up all extracting-combs taken from foul-broody bees. What percentage of a yard of forty colonies (nearly all having it, but most of them fairly strong in bees) would come through the winter?

SUBSCRIBER.

[We certainly would melt up all combs affected with American foul brood. Combs from a European foul-broody colony may be used again; but we would advise melting them up also to be on the safe side.

Foul brood, either European or American, will not affect the wintering of a colony of bees unless it reduces its strength in the fall. Many hives affected with either disease will have only a few cells of dead matter. Such colonies will winter as well as the average normal one, other things being equal. But if a stock has foul brood very badly, so that its strength is reduced, it will die, probably, during the winter and the following spring; for as soon as the bees can fly, other bees will rob out these diseased combs, thus spreading the infection far and wide. This is precisely the manner in which American foul brood is spread in many cases.—ED.]

Making Increase by the Alexander Plan

I have a few colonies in ten-frame shallow hives, two of which make up one brood-nest. I should like to know the best way to manipulate these hives for increase, following the Alexander plan, or any other more suitable to meet existing conditions. I have plenty of shallow frames with full combs or foundation. I am prepared to buy queens if advisable. The honey flora is plentiful, consisting of dandelion, fruit bloom, clover, smartweed, melilotus, and fall flowers. SUBSCRIBER.

[We would advise you to follow the Alexander plan, which plan we have given several times in these columns. You will also find it given under the head of "Increase" in our A B C and X Y Z of Bee Culture. Your increase will be much more rapid if you buy queens, of course; but it is more economical to raise one's own queens. However, in some localities there are so many black bees that pure stock can not be raised, and for that reason, if for no other, it is better to buy queens and thus have pure stock.—ED.]

Information Wanted Concerning One of Mr. Langstroth's Relatives

Have you any information as to where Miss Saddie Langstroth can be found? She is the daughter of J. T. Langstroth, and granddaughter of Rev. L. L. Langstroth. Her cousins have tried to find her for several years, without success. She probably is married, and under another name.

Holyoke, Mass. HERBERT F. DAVIS.

[If any of our subscribers or readers can furnish Mr. Davis the desired information we hope they will do so.—ED.]

Our Homes

A. I. Root

Go ye into all the world, and preach the gospel to every creature.—MARK 16:15.

"DARKEST AMERICA;" HOW TO GROW IDIOTS AND IMBECILES.

I have recently been talking to you about "*starving* America;" but now we have something that confronts us that might well be called "*darkest* America." In this day of great progress and wonderful enterprise we have not only whole farms but whole regions devoted to growing separate things. A great part of Michigan is devoted to growing white beans; and in riding through these big bean-farms one might almost think Michigan could supply the world with this great staple. Then we have great egg-farms; cranberry-farms; and just recently I spoke to you about fox-farms for growing furs for fashionable women. But I believe none of you ever heard of not only a farm—and may God forgive us—but a whole *region* for growing—what do you suppose? *Imbeciles, idiots, paupers,* and *criminals.* Read the following:

Mr. Root:—Read the piece marked in inclosed page of Atlanta *Journal,* and say if you don't think missionary work is badly needed there.

Moultrie, Ga. J. E. WILLIAMS.

Below are some clippings from the article submitted to me. As the article was of too great length for our pages, I have simply quoted the three first and three last paragraphs. If you want the whole of the officer's statement I presume the editor of the *Atlanta Journal* will be glad to furnish you. Ask for their issue for September 14.

"Why do the good civilized folk of America ignore a countryside people with adults who are mentally children; strong self-willed men and women of native stock who are without reason, judgment, or self-control?"

Miss Elizabeth Kite, State agent for the New Jersey School for Feeble-minded, put the question with a finality that accused. "You doubt the possibility? Then come with me to the Pines. You will find the district a plague-spot of moral contagion—a feeder for our jails, almshouses, and hospitals."

Next morning found us motoring through a lonely tract of 2000 square miles between the barren coast of New Jersey and the fertile Delaware Valley. This area of scrub cranberry-bogs and salt marsh is peopled with families of degenerates.

* * * * * * * * * *

"Aunt Lil" was a little girl of twelve when her first baby was born. So was imbecile Louise. So, think of the awful pity of it, were a score of women in the sand-holes.

Consider the intermarried Dixon-Osborn clan, 199 individuals, of whom 13 are normal, 124 degenerate, 20 illegitimate, and 22 criminal, living on the outskirts of a country town.

Imbecile Betsie married defective Zacher, and became the mother of nine feeble-minded children, 12 feeble-minded grandchildren, 23 feeble-minded great-grandchildren. Of these, one died in infancy, eight lived in public institutions, no one knows how many went to jail. One granddaughter, Mag, bore eight illegitimate children.

Can all this be really true in our United States of America? I devoutly hope it is not true, and that it has been largely gotten up for the "Sunday edition" to make a sensation. However, a large part of it must be true. Will the readers of GLEANINGS who are competent to tell us something more about it give us the facts?

I believe every one of our Protestant churches is supporting several missionaries in foreign lands. We have been priding ourselves that the great wide world has been pretty nearly canvassed; that there are very few places in Africa, South America, or the remote islands of the sea, where the Bible has not been placed and the gospel preached; but these people, as we learn from the part of the article I omitted, can neither read nor write. If this is true, what about the enforcement of our laws for compulsory education? Do not these just and righteous laws include *every portion* of the United States? There are public institutions for the care of idiots and feeble-minded in that vicinity, for the article alludes to them. Where are our missionary societies? Does the A. M. A. of the Congregational Church know any thing about it? I ask the question because I have in years past given it thousands of dollars to attend to just such cases as these. We have been told for years past of their great work among the "mountain whites" of the South; but the mountain whites can read. Booker Washington, in his great work among his people, does not mention ever having found a condition among the colored people anywhere equal to this. Our missionaries in Africa have never told us any thing to equal it. In this region the marriage ceremony is a dead letter. These people are "swapping" wives indiscriminately; and some poor mothers, who have children by different fathers *still living,* when they protest about being swapped about in this way are obliged to put up with it. If it were somewhere *away off,* we might shirk a great part of the responsibility; but this tract, covering ever so many square miles, is right in the neighborhood of Philadelphia, Baltimore, New York, and last, but not least, Washington. Can not something be done to stop *breeding* children from idiotic and imbecile parents? The *Atlanta Journal* gives a picture of a whole family. The father can neither read nor write, and the mother is an imbecile. The terrible responsibility rests on every

one of us, including you and *me*. No wonder we have awful crimes when we as a nation are *contributing* to the breeding and peopling of our country with idiots and imbeciles. The women are all mothers with large families, as you might suspect they would be; and where they have sense enough to know their condition they are groaning under their burdens. Where is the W. C. T. U.? where is the Salvation Army? where is the Y. M. C. A.? where are our Endeavor societies and our other societies of like import?

May the Lord be praised that he has permitted me through the pages of this department of our journal to take up and hold before the world conditions of this kind! Once more let me say it, we are making wonderful progress in improving our farm products; we are also making great progress in improving our domestic animals. Our experiment stations are showing us how to build up just the kind of horses, cattle, sheep, and even chickens, that we want. We have stopped raising scrubs, and are giving our time and attention to only the best improved varieties. There has been a *little* talk about better, brighter, and more intelligent *mothers* (yes, and *fathers* too), that we may fill our schools and finally our great nation with better and brighter men and women. May God help us to look after the *babies* that are being born and which are *going to* be born. And, finally, let us remember the responsibility placed on every one of us who is a follower of the Lord Jesus Christ to "go into all the world, and preach the gospel to every creature."

HUMANITY; WHAT ARE WE DOING IN THE WAY OF "SELECTING" BETTER FATHERS AND MOTHERS?

Did it ever occur to you how this present generation is going? Instead of the well-to-do people and those rich in "gray matter" populating this land of ours, it is the poor, and in many cases those who are lacking in intelligence. The rich and wise rear from only one to two children, while the lower classes are bringing up large families. What will this world come to at that rate? E. W. T.

Let me suggest to the good friend who sends the above, and asks to have his name omitted, that somebody recently called my attention to the fact that the children of millionaires, whether they happen to be few or many, are generally "no good." In other words, if a child is brought up with the understanding that his environments are such that he "don't *have* to" work for a living, this one thing too often makes him a useless "dude." And now if this is true, are affairs in such a *very* bad shape after all? Our great men and great women not only often come from humble surroundings, but *quite* often, indeed, where the parents are poor, and have *large families*. Does it not behoove us then to be *sure* we are right before we push ahead too vehemently?

HOOKWORMS IN FLORIDA, ETC.

On page 391, June 1, I said, in speaking of the hookworm: "If this disease or parasite exists in the part of Florida where we are located, I have not heard of it." In the midst of a business letter from a man who is well able to speak understandingly in regard to Florida (for it has been his home all his life) he writes as follows:

Hookworms are a very common pest in Florida, and numbers of people are afflicted with them. It is much more prevalent than you think. Perhaps 20 per cent of all the people in the State are rather badly afflicted, some very badly. It can be stamped out easily by proper precautions as to closets and insisting on children wearing shoes. Still, it may be that it is spread by cattle and dogs. I have heard that this is so.

I do not care to be quoted, but you may use the letter if you desire, and say "name given on special request." As to the doctor's examination of the school children, I do not know if that was paid for by the Rockefeller contribution or not, but presume it was. I am doing all I can personally in talks with home people as well as chance acquaintances to impress the value of treatment against hookworms. The natives seem rather to resent the idea of these worms; but I clinch the argument by telling of results from our own boys' treatment.

I hardly need tell you that there is a large class of people, and especially real-estate dealers, who object to the publication of any thing like the above; but the good of humanity and the good of Florida people, especially the children, demands that they have the facts. There was considerable sport at one time, about Mr. Rockefeller's great gift; but you will see from the above that he well knew what he was talking about and what he was doing. I have also been told that people who are badly afflicted in this way, especially ignorant and colored people, absolutely refuse to go to a doctor. If I am correct, almost any physician is fully posted in regard to it, and will be able to detect the symptoms and apply a remedy.

ROACHES IN FLORIDA; HEADING THEM OFF.

While I am writing I wish to mention that, if Mr. Root doesn't want the roaches to eat the labels from his bottles, he should put the label on the bottom of the bottle. J. P. HOHMANN.

Flemington, N. J.

My good friend, your remedy will work if the bottles do not get tipped over; and, besides this, it is a great deal handier to have a label where you can see it without lifting the bottle. I presume poison might be added to the mucilage by the label manufacturer or whoever makes the paste when the labels are applied.

Notes of Travel

Know ye not that your body is the temple of the Holy Ghost?—I. Cor. 6:19.

I have all my life loved to travel, because it gives me such an opportunity to study humanity, or, if you choose, to study my fellowmen; and I especially enjoy seeing the progress that is being made toward *uplifting* humanity. I want to see especially what progress is being made, not only here in America, but throughout the whole wide world, in looking after the health and morals of humanity. Our great railways are spending not only thousands but millions toward giving more and better comforts to the countless throngs, high and low, rich and poor, that seem to be *always* traveling somewhere. It has rejoiced my heart every time I leave home to see the improvements going on. Our readers may recall the vigorous protests I have made from time to time (for forty years or more) against filthy toilet rooms and closets. It just begins to dawn on me that God, in his merciful love, gave me that "thorn in the flesh" (see Homes for Nov. 15) that I might keep better posted, and be better able to make public protest against shameful vandalism.

When I see a great new union depot in any of our big cities I am at once curious to know whether they have considered the matter we are now discussing, and how much *money* they have invested in it. For years I was disappointed; but now (thank God) there seems to be a glorious awakening. To illustrate: At Jacksonville, Fla., in the large union depot, there are plenty of clean tidy closets, and notices conspicuously placed, reading something like this: "Tobacco in any form must not be used in these apartments;" and, again, "$25.00 fine for mutilating or disfiguring any of the furniture; this is a penalty enacted by law."

To enforce the above I think a porter is stationed; and this porter furnishes soap and paper towels for a nickel. Somewhere I have seen paper towels for a penny dropped in a slot. Good for Jacksonville!

But now listen: In the city of Tampa, in a brand-new fine union depot, the toilet seats, walls, and floor were spattered with tobacco quids and juice; varnished woodwork split and broken; dust and filth sticking to corners, etc., although just one year ago the room was in beautiful trim. However, there *was* one beautiful closed closet to be opened only by a "nickel in a slot," and this was protected by notices similar to those in Jacksonville.

It occurs to me that something might be said right here in regard to the demoralizing tendency of the tobacco habit; but some visitor at the "Home of the Honeybees" might "come back at me" and say, "Why, Mr. Root, the closets in your own factory at Medina, Ohio, are, at least *some of them,* stained with this same tobacco juice." With sadness and sorrow I can only reply that I hope our men employees may read *this,* even if they do not read *all* I write.

How about the closets on our fine Pullman cars that are fitted out with such shining furniture and elaborate expense? Some of them are nicely cared for, but many are not. I think, however, improvement is plainly visible every trip we take.

BROOKSVILLE, FLA., SUB-EXPERIMENT STATION

We did not take in the above on our trip here as planned, because we passed the branch railroad at St. Catherine in the night; but I started to make the visit on Friday, the 14th, taking the daily steamer to Tampa, where I was obliged to pass the night. I saw by a Tampa daily two things that interested me. First was a moving-picture show of figures that *talked* as well as moved. As a rule I seldom attend these shows, and never go to theaters, but I felt it right and proper to see what has been called Edison's latest and greatest achievement. The first act on the program was a splendid lecture by a talented orator and a most vivacious speaker. It was *not* an illusion. The man himself stood before you, and you could see every motion of his face and mouth, and his words were so clear I caught every syllable easily. In his talk he said if this invention had been known we might now have the pleasure of seeing Washington face to face, and hearing the father of our nation exhort his soldiers. To illustrate his talk he picked a dish from the table and mashed it on the floor. We saw the pieces fly, and heard the crash, saw an attendant gather up the fragments, and one had to pinch himself, almost, to realize that *no* dinner-plate had been dashed on the floor at all. A girl started out with a tin pail for water. We heard the pail rattle against the bushes, saw the water, and heard it splash as she filled her pail from the "old oaken bucket." Then a group of singers danced and sang, and every voice of the dozen singers was distinctly audible. Just as my conscience began sounding faintly, that "alarm bell" I have told you about, a waiter brought in a tray of beer-glasses with foam rolling off the brimming mugs; and when the singers stopped, they clinked their glasses before drinking. I got up (even though I was then on a front seat),

and went out. Why should this great and precious invention, this gift of God, be prostituted (when it opens up such possibilities) to illustrate a drunken revelry? I suppose it is because the multitudes demand such things; and I felt pained as I failed to notice that *any* one else in that audience of several hundred felt as I did, that it was time to go home.

Let me say a word here in commendation of the good people of Tampa. Whenever I was in doubt about finding my way I met most courteous responses, and different people went out of their way to put me on the right car, or to help me to a place difficult to find, in spite of my protest. This is a pretty good world, after all. If I am right, the saloons in Tampa have all been obliged to remove all screens from before doors and windows. Of course there was grumbling and protest; but Tampa police obey orders from their chief.

Let me digress a little before I mention the second thing that took my eye in the city daily. A few years ago I talked with Crenshaw Bros., seedsmen, about handling bee-supplies; but as they were then also in the commission business they said they could not well take on any more responsibility. Well, of late the brothers have divided up, in some way, and the truck, fruit, etc., are handled as a separate line in a different part of the city. Well, I saw in the paper that this latter firm had just received a shipment of *ten thousand* chickens from Tennessee. I was up before it was fairly daylight; and the crowing of the roosters greeted me to their great establishment. A great covered platform, which I suppose might be called a warehouse, was full of workmen, even at that early hour; and, besides the chickens, almost every line of goods that grows in the South was being crated and shipped to customers. Don't tell me any more that Florida people are "lazy." One of the boys told me about half of the 10,000 chickens had been sold and sent away. They were placed in pens of perhaps 300 or 400 each, and in each inclosure there seemed to be almost every breed represented more or less. The boys said they were sold in lots at 65 cts. each; but where a purchaser wanted to *take his pick* the price was more, for in the lot there were "Reds" and "Rocks" that would weigh much more than 65 cts. I wonder what the "chicken-raisers" in Tennessee get for their fowls.

The fifty or sixty miles to Brooksville is almost an unbroken wilderness except for the turpentine camps; and as we near the town we come into the Florida hills. In fact, I did not know before there were such hills and valleys in the whole State. To get home this Saturday night I found I should have to get an automobile to catch the Seaboard train at Dade City, about 25 miles, over a sandy road. As the experiment station was out about four miles toward Dade City we figured to start about as soon as I could get my dinner; and to get as much time as possible at the government station, I (at least for once) ate hurriedly. On the bill of fare at the hotel my eye caught "baked yams," which I ordered with roast beef, etc. When the yams came I thought at first they had by mistake sent a big round and smooth beet. It was baked so the outside was slightly charred; but on mashing I found it yellow and dry, and tempting to look at. I shook out the floury inside on the platter of roast-beef gravy, and took a taste. Why, it was worth the long trip to Brooksville, almost, to get that dinner of *baked yams*. I have written for some cuttings, and will report later. After my 20-cent nice dinner I found a two-seated Ford at the door, owned by a man who had run it only six weeks. He said his wife would like to go along if I, who hired the rig, did not "object." Did anybody *ever* hear that A. I. Root objected to a woman being in the crowd?

Prof. Gomme, of the government station, is a big stalwart Texan, and I soon found he was "big" in many ways. As I could spare only about an hour we talked fast. Pretty soon a bright little woman came out on the porch and said she wanted to be introduced to Mr. Root, for she just overheard something he said about "chickens." Chickens indeed! I wonder if it is true that I do *sometimes* "talk about chickens." We went out and got the other woman into the auto; and didn't we talk chickens and almost every thing else? Mrs. Gomme has ducks and chickens, both, and is just getting the fever for "weeding out the drones" with trap nests, etc.

Uncle Samuel has searched Florida for the best soil for dasheens and a lot of other stuff, and decided on this spot where oak trees grow as large around and as tall as almost anywhere up north; and this little woman with one child is almost alone in the wilderness. As nearly as I could learn, there are no white women living much nearer than Brooksville. No wonder she could "talk" when she found somebody besides the ducks and chickens.

On p. 738, Oct. 15, I gave a report of this government station, and suggested that "millet 18 feet high" might be a misprint. There was no misprint. This wonderful plant is not only standing thicker than

closely planted corn, but it is excellent for horses and cattle, and for filling silos. Listen:

"Mr. Gomme, you must have used a tremendous lot of fertilizer or stable manure, or both, to get this enormous crop."

"Not a bit of *either*, Mr. Root. Newly cleared Florida soil did it all."

What do the good friends who say "nothing will grow in Florida" have to say to the above?

I saw papaya trees with more than a wheelbarrow full of great "melons" on a tree; and so many things from all over the earth being tested I can not remember a tenth part of them. The dasheens were just plowed up, and lying on the ground—about 2000 bushels. All the small ones are to be given to applicants. I think 1000 or more requests are now waiting their turn, when the tubers are dry enough to mail. Mr. Gomme advised planting about Feb. 15 here in Florida; but my impression is they can be planted any time below the frost-line. My neighbor, Mr. Ault, this morning dug two hills (see picture p. 784) that went 17½ and 17¾ lbs. respectively. Mr. Gomme plows under the great fleshy stalks to enrich the ground; but we found them even more luscious for a stew, as I have described, than the baked tubers. The latter should be dug and dried out in the sun for a couple of weeks before trying to bake them. No other vegetable is so easy to prepare for the table. Just brush the tubers well with a good stiff brush, and they are ready to go into the oven.

Notwithstanding the sandy hills and roads that crooked between the trees at almost every rod, we made Dade City 45 minutes before train time. In some places it seemed as if almost every tree close to the road had been barked by automobile hubs. The 25-mile trip cost me $7.00. Let me resume the subject I started out with, by one more illustration.

As I purchased my ticket at Dade City I asked to be directed to the water-closet. Didn't have any. I asked the freight clerk for the nearest place, and he said, "Court-house two blocks away." At the court-house (a nice new brick), some expensive closets had been installed; but they were bespattered with tobacco, the room was unswept and untidy. Dear brothers and sisters, is this a fair representation of the present stage of civilization? Should not our court-houses be in some sense "temples of the Holy Ghost" as well as temples of law and justice?

Health Notes

HOT-WATER INJECTIONS, ETC.

Our older readers may remember I was once quite enthusiastic about this form of water cure. They may not all recall, however, that later on I dropped it and advised against it. Here is what Terry says in the *Practical Farmer* in regard to the matter:

Injections are all right for emergencies; but for a steady practice drink enough water and eat proper food so nature will attend to the movement of bowels. Is not this natural and sensible? You say a doctor who edits a certain health magazine is constantly advising the internal bath. Yes, and turn over to the advertising pages and you will find that he is interested in the sale of a costly contrivance for introducing water in this unnatural manner. He says there that he can prove that 90 per cent of all your ailments are due to constipation. Very well; and I can prove that plenty of water put in the mouth in a natural way, along with food which has in it the natural coarse parts which the bowels need, will cure and prevent constipation without the use of his instrument at all. I have seen reading-matter praising this instrument in a California paper, and then the advertisement in another place, probably both paid advertisements. Don't be caught in any such easy manner. It is, of course, far better to use this contrivance than to be constipated. But it is better yet to live properly, and have no earthly use for it.

The above is all right, as Terry outlines, for an emergency. When you are in great distress, and can get relief in no other way, by all means use the hot-water injection; but after that, try to live so that nothing of the kind will be needed—that is, be careful what you eat, and be careful about overeating. It is now several years since I had occasion to use any thing of the kind.

SEX HYGIENE FOR SMALL CHILDREN.

For some time I have been somewhat worried and anxious about the rush to teach small children sex hygiene. I was invited to be present on one occasion where a distinguished physician gave a talk to school children. His talk was all right, and splendid for boys a dozen years old or so; but I really felt troubled to see some little chaps on the front seat, but little more than half a dozen. Another thing, I had a strong feeling that the mother should be the teacher, and not the teachers in our public schools, nor even a great doctor. The following, which I clip from the Chicago *Advance*, sums up my ideas pretty thoroughly in just a few words:

SEX HYGIENE: A WARNING.

Within the last year there has been a perfect epidemic of sex consciousness, one aspect of which has been a vociferous demand for the teaching of sex hygiene to children.

There is real need of something in this direction, but we wish to utter a reiterated warning. Whatever else there is in this movement, one thing has been evident in many of the discussions, the attempt to secure instruction on sex hygiene in public schools constitutes one more effort of parents to shirk their God-given responsibility. No well-meaning maiden lady giving blushing lessons out of a text-book, no imported lecturer with exaggerated ideas of sex consciousness, can be any proper substitute for fathers and mothers, and these may do great harm. We have no doubt of the good intentions of most of the people who are behind this movement, but we have grave doubts of the practical wisdom of many of them.

Awakening a childish interest and curiosity in things they are not old enough to comprehend properly is the trouble. I think I must have been six or seven years old when I went to my mother (bless her memory) and asked her something in regard to a certain word I found frequently in the Bible. Her reply was something like this:

"My child, will you not take mother's word for it that it is best for you to drop this matter until you are a little older? You are not able to understand it now. Now please trust your mother a little more, and do not go to the boys nor to anybody else about it. Mother knows best, and she will teach you about all these things when you get to be a little older. Will you not trust her?"

I gave her my childish promise, and stuck to it pretty well; and when I happened to overhear the talk of bad boys in regard to this matter, my mother's warning prompted me to keep away from them. I have reason to believe there are quite a number of mothers who will agree with me here. Now, dear mothers, have you taken the same pains with your young boys that my mother wisely took to protect me in my childhood from grave danger?

Temperance

WHISKY FOR SICK FOLKS—SEE P. 743.

The *Union Signal* for Nov. 6 contains a full-page article in regard to this matter, and informs us that a hospital in England has been run for *forty years* without the use of any liquors, and its record is ahead of any similar institution, as we know it would be. Now, there, if your family physician is prescribing intoxicants he is not up to date; and if he refuses to inform himself, get a different doctor. Just consider for a moment a *hospital* in this enlightened nation that, instead of giving its innocent inmates *health*, gives them that which helps on to—"*hell.*"

IF RUM IS BAD FOR THE INDIAN, HOW DOES IT HAPPEN THAT IT IS NOT ALSO BAD FOR THE WHITE MAN?

We clip the following from the *Wheeling Advance:*

GOVERNMENT BARS RUM ON PUEBLO RESERVATION; SUPREME COURT SETTLES LONG-PENDING FIGHT RELATIVE TO QUESTION OF LIQUOR FOR INDIAN WARDS OF UNITED STATES; LIQUOR GANG SUFFER A TELLING BLOW.

WASHINGTON, Oct. 23.—The supreme court held to-day that the Pueblo Indians are under the guardianship of the government, and liquor could not be taken into their country without violating the federal law.

The decision marks a long fight to distinguish those Indians who have lived in towns since long before the first white settlement in the United States, from the tribes which have been held to be wards of the government.

The case has been hard fought, and the defeat of the liquor gang is a stunning blow. Advocates of temperance, however, are inquiring why, if the highest court in the land holds liquor bad for the red man, it should not be equally bad for the white man. To be consistent, it is urged that the government should submit at least the resolution for an amendment to the federal constitution to prohibit the sale and manufacture of the beverages, in order that the several States might express themselves upon it.

A CELLAR FULL OF WINE 25 YEARS OLD, BUT STILL A TEMPERANCE MAN, ETC.

My grandfather, a naturalist, horticulturist, and wine-raiser, taught me to despise tobacco and liquor. Strange to relate, grandfather had the cellar full of wine, some 25 years old; but he hardly ever drank any except as a test. He was from the Rhine River, Hessen Darmstadt, a wine country. Naturally grapes were his work. This goes to show what *will power* is. The hard-cider barrel, seemingly harmless, has started many a drunkard, as our village character admits.

One poor disciple of "John Barleycorn" passed through our yard just as I had a few frames of honey out. He said, "So! that the work of the busy bee? Fine and wonderful. Sure, and they must work to do it; and I would do the same if they'd let me sleep all winter and ate honey bread." I could not give him an answer, as a witty Irishman is past my slow mind. One of his sayings is, "I was conceived in misery, born in poverty, raised in ignorance; so, blame me not. I have enough to eat, and can eat it, so I am rich."

Hillside, Ill., Sept. 11. GEO. A. WOLFF.

WHO IS TO BLAME?

The *Union Signal* says:

"The first step toward the elimination of sin is to get after the man who *makes money* out of it," is the terse way *Collier's Weekly* outlines the course of procedure in fighting the traffic in drink and vice.

VOTES OF WOMEN WIN SWEEPING VICTORIES IN ILLINOIS FOR PROHIBITION.

As we go to press, election returns show that 22 Illinois cities and towns were carried by the drys. Thirty-one counties in the State are now entirely dry. Women went to the polls in large numbers, and voted dry in about the ratio of four to one.—*Union Signal*, Nov. 6.

Index to Gleanings in Bee Culture

Volume XLI

In using this index the reader should not fail to note that it is divided into five departments, namely, General, Editorial, A. I Root's writings, Contributors, and Illustrations. The index of General includes everything except Editorials and A. I. Root's writings.

GENERAL

EDITORIALS.

A. I. ROOT'S DEPARTMENT.

CONTRIBUTORS.

ILLUSTRATIONS.

GLEANINGS IN BEE CULTURE FOR 1914

The Magazine for the Beginner, Back-lotter, and Specialist Beekeeper

For several years we have been doing our best to make GLEANINGS an indispensable publication for the wide-awake beekeeper whether he has but one colony, a small suburban apiary, or a series of out-apiaries numbering hundreds of colonies in all. We believe we have never received such enthusiastic approval of our efforts as we received in 1913 when hundreds of letters from our friends told of their appreciation. We wish that we might print a number of them here, but we prefer to utilize the rest of the space for outlining our plans for 1914.

For 1914 we shall continue the special numbers, the feature which has so delighted our readers during the last three years. In deciding just what subjects to take up, we have not selected topics at random, for we have been guided by the expressions of the majority.

JANUARY 1—BEES AND POULTRY.—We think we are safe in saying that no special number that we ever published proved so popular as our February 15th issue for 1912. In getting out another special number devoted to the interests of poultry-raising and beekeeping, we propose to surpass our former efforts and to get together the best material possible on poultry-raising from the beekeepers' standpoint.

FEBRUARY 1—BEES AND FRUIT.—Our March 15th issue for 1912 has been used far and wide by beekeepers and fruit-growers alike to show the value of bees in large orchards. In the two years that have elapsed, however, so much new material has developed that in order to be entirely up to date it is really necessary to have another special number on the same subject. We have a wealth of material that has never before been given to the public. Extensive fruit-growers who are not especially interested in *honey*-production will tell of the value of bees in orchards.

MARCH 1—BEEKEEPING IN CITIES.—Probably few beekeepers realize the number of beekeepers there are in every large city. City beekeeping is a most interesting topic, and in addition to stories of beekeeping told by professional men we shall have discussed various problems connected with bees in attics, on roofs, and in back lots. We also have a *true* story of a beekeeper in a city who was fined $100.00 because his bees were considered a nuisance, and who afterward appealed to a higher court and won out. Good story.

APRIL 1—BREEDING.—Ever since we first began having special numbers there have been requests on the part of a good many of our readers for a special number on breeding. We are glad that we are able to arrange for it this year, for it is a fact that very little is known in regard to breeding bees. Breeding is one of the most important subjects connected with our pursuit. We shall publish special articles by noted queen-breeders on qualifications of breeding queens. Queen-rearing both for the small beekeeper and the specialist will be fully dicsussed.

JUNE 1—MOVING BEES.—We ourselves expect to move three hundred colonies of bees to Florida, get a good honey crop, double the number of colonies, and move them back again in the spring. Details of moving by boat, wagon, auto-truck, and by rail will be fully described and illustrated, and other large beekeepers having experience along this line have also promised articles for this number.

AUGUST 1—CROP AND MARKET REPORTS.—There has never yet been a systematic effort put forth for the compiling and publishing of comprehensive crop and market reports from various parts of the country. In 1914 we are going to make the effort of our lives to get telegraph reports from important fields, such as the clover-belt, Texas, Colorado, Idaho, and California. etc. These will be published right along as soon as we can get them, but in this August 1st issue we shall have a grand summary of the crop reports and conditions of the market in general. No beekeeper should miss this important number.

SEPTEMBER 1—WINTERING. — We have not learned all there is to be learned in regard to wintering. A number of specialists are going to make experiments during the winter of 1913-14, which experiments will be published in this number. We shall also give our own experience summed up as to the feasibility of wintering northern apiaries in the South.

IS NOT ALL THIS WORTH WHILE?

We have now given you our plan for 1914. If you are trying to make the most out of your bees we feel sure you can not afford to miss such a wealth of information as the subscription price, $1.00, will bring you.